University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Public Access Theses, Dissertations, and Student Research from the College of Education and Human Sciences

Education and Human Sciences, College of (CEHS)

5-2021

Organizational Supports and School Climate

Wendy Kemling-Horner
University of Nebraska-Lincoln, wkemling@huskers.unl.edu

Follow this and additional works at: https://digitalcommons.unl.edu/cehsdiss

 Part of the Other Education Commons

Kemling-Horner, Wendy, "Organizational Supports and School Climate" (2021). *Public Access Theses, Dissertations, and Student Research from the College of Education and Human Sciences*. 394.
https://digitalcommons.unl.edu/cehsdiss/394

This Article is brought to you for free and open access by the Education and Human Sciences, College of (CEHS) at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Public Access Theses, Dissertations, and Student Research from the College of Education and Human Sciences by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

ORGANIZATIONAL SUPPORTS AND SCHOOL CLIMATE

by

Wendy Kemling-Horner

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

(P-12 System-Level Educational Leadership)

Under the Supervision of Professor Jiangang Xia

Lincoln, Nebraska

May, 2021

ORGANIZATIONAL SUPPORTS AND SCHOOL CLIMATE

Wendy Kemling-Horner, Ed.D.

University of Nebraska, 2021

Advisor: Jiangang Xia

School climate is the perceptions and attitudes that are evoked by a school's environment and affects every aspect of the school surroundings. Therefore, it is essential that principals have the resources they need to positively affect the climate in their buildings. In fact, a positive school climate has been linked to not only the achievement of students, but also the satisfaction and retention of the school staff. A positive school climate does not come easily; instead, it is the result of significant devotion to the school's safety, disciplinary environment, and the relationships between constituents.

District leaders have a strong desire to have a positive school climate in each of their buildings. They know that, when given the right supports, principals can make the necessary adjustments to their school climate. Unfortunately, resources are in great demand and are scarce. Therefore, it is essential that district leaders know which resources most influence the climate.

This study is a quantitative, multilevel analysis that utilizes the data from the Teaching and Learning International Survey (TALIS) from 2018 which was developed by the Organisation for Co-operation and Development (OECD) to analyze the organizational supports which can assist the principal in improving the school's climate. The results indicate that through the development of principals, principal autonomy is

increased, and school climate is improved. This finding encourages district leaders to support the structures and mechanisms needed to attract principals to professional development opportunities. In addition, the results indicate that through the provision of resources, teacher student relations and school climate are improved. Conclusions, limitations, and recommendations for further research are also discussed.

Keywords: Principal Professional Development, School Climate, Teacher Student Relations, School Resources, School Autonomy, Delinquency and Violence, and Disciplinary Climate

Acknowledgements

This journey is one that is not traveled alone. The support I have received has guided me along the way and has led me to what I know is not my final destination. There are so many individuals that I am indebted to. First, my advisor and committee chair, Dr. Jiangang Xia. He has helped me traverse the quantitative methods and the dissertation writing process with patience and grace, even when I panicked sporadically about my data. I am also thankful for the remainder of my committee who continued to support me through this process: Dr. Shavonna Holman, Dr. Suzanne Kemp, and Dr. Taeyeon Kim. You provided me with the necessary feedback to get to the finish line. I would be remiss if I did not thank Dr. Mary Beth Lehmanowsky. She set me on the right path when I embarked on this adventure.

I am so fortunate to have a great set of friends and colleagues. Betsy, you supported me through this entire process, picking up the pieces I have unfortunately left behind. Rick, you provided incredible guidance and mentorship in not only my academics but also my career. There is no doubt in my mind, that you have helped me develop into the leader I am. Laura and Peggy, you started the journey before me and developed the path to excellence. Knowing you were with me, helped me see that I could actually finish this. Stacy and John took the time to provide writing advice. Without all of you, I would probably still be pondering a topic and floundering through the process.

Last but definitely not least, I would like to thank my family. To my husband, you are the best support system that anyone could ever ask for. You are always my greatest cheerleader, and when I think I am failing, you always remind me that I am strong, smart, and just need to keep pressing forward. You have always been my rock,

inspiration, and hero. Mom, dad, and Terry, you always told that I could be anything that I wanted to be. I just needed to be dedicated to the task at hand. You have always had faith in me, and I have always known you were proud of me. My "little" brother and my children have always been encouraging and supportive in all that I have done. Jayne, you have always given me support and guidance when I needed it the most. Finally, I cannot ignore my grandparents. They were so amazing in every aspect of life. They modeled how to treat others, mentor, work, live, and love. I know they will always have an immense impact on who I am, and who I strive to be.

Table of Contents

List of Figures

List of Tables

List of Appendices

Chapter 1

Introduction

School climate encapsulates the overall culture of a school. The culture that is generated by the attitudes, beliefs, and norms which embodies and regulates every facet of the educational system. Thapa et al. (2013) describes school climate as being a concept that is multifaceted and includes the safety, environment, and engagement that occurs in schools. Therefore, school climate is multidimensional (Grazia & Molinari, 2020). Since school climate has such an impact on the students, staff, behaviors, and approaches to learning, district leaders need to know how to support building leaders in the improvement of school climate and ultimately student achievement. The organizational supports that have a direct and substantial effect on school climate are principal professional development, principal autonomy, and school resources which include time, personnel, and funds.

Through a more comprehensive appreciation of the supports that enhance the building principals' ability to improve the school climate in their buildings, central office administrators can assist the principals to make these needed adjustments to improve the overall culture of the school. This chapter is organized into the following sections: problem statement, research questions, delimitations, significance of the study, and definition of key terms.

Overview of the Issue

Problem statement. According to the National School Climate Center, multiple national agencies such as the US Department of Education, the Center for Disease Control and Prevention, as well as the Institute for Educational Sciences confirm the

establishment of a positive school climate can enhance school connectedness, increase student achievement, prevent harassment and violence, reduce the rates of school dropout, and improve teacher retention rate (Coulston & Smith, 2013). Although there are many different studies linking school climate to all of these benefits (Coulston & Smith, 2013; Duckenfield & Reynolds, 2013; Hughes & Pickeral, 2013; National Association of School Psychologists, 2019; Payne, 2018; Ross, 2013), there have been fewer studies that reviewed the necessary resources and supports district leaders can provide to principals to make the positive changes in school climate.

School leaders sculpt the necessary supports and priorities for the culture of the school. School climate is a vital requirement for a successful school. The district can affect school climate, but ultimately, principals are the key factors (Cole-Foppe, 2016). An effective principal will maintain a healthy climate for not only students, but also staff, in order for them to flourish and reach their full potential (Cole-Foppe, 2016). The improvement of climate at a school has the ability to increase achievement, graduation rates, school connectedness, and teacher retention rate, and reduce dropout rates, bullying, and violence (Coulston & Smith, 2013; Kearney, Sanmartin, & Gonzalvez, 2020); however, leaders need the appropriate resources to impact the climate. Therefore, districts need to make the improvement of a school climate a priority when deploying resources.

Resources in schools are not just merely monetary resources. In fact, there are many different resources that are allocated in schools such as professional development, time, personnel, and funds. The distribution of resources requires more weight and consideration than merely distribution formulas to districts but also within districts

(Adams, 2008; Lafortune, Rothstein, & Schanzenbach, 2018). However, to allocate resources effectively, the building leaders need the knowledge and training to have the expertise to do so.

Local educational agencies are tasked with the demand to improve student outcomes (Brown, 2016), and principal capacity is one method to make sure this is attainable. The importance of successive building leadership has extensively been identified by researchers and practitioners (Leithwood, Harris, & Hopkins, 2020). According to Fullan, Cuttress, and Kilcher (2005), building capacity of our leaders is a key variable to support such organizational change. However, many of our country's principals do not have relevant professional development provided to them which addresses current issues in schools today (Rowland, 2017). Often principals continue to attend professional development which is specific to teachers' needs rather than their own (Rowland, 2017). Despite knowing that the professional development is necessary to make significant changes and improvements to the school environment and outcomes, districts are still failing to provide appropriate professional development to principals to help them develop their expertise (Sutcher, Podolsky, Kini, & Shields, 2018). According to Quin, Deris, Bischoff, and Johnson (2015), it is recommended that in order to have a high performing school, sufficient, targeted professional development needs to be developed and delivered for the principals. District level leaders should ensure effective professional development for principals is not only available but expected.

Once principals have the professional development necessary to know how to deploy the schools' resources, they need to have the autonomy and flexibility to do so. Increasing school's autonomy enhances the principal's role and enables the principals

and their staff to advance approaches which focuses on their building's strengths and targets their weaknesses (Dou, Devos, & Valcke, 2017; Honig & Rainey, 2012). The building staff know best what needs to be addressed and can provide valuable strategies to do so. In order to do this, however, it is essential that principals have increased discretion over decisions in order to utilize the resources they have, such as staffing, funds, and educational policies, in the most efficient manner.

Consistent with the National Center on Safe and Supportive Learning Environments (2017), there are three areas that should be deliberated when appraising school climate: environment, safety, and engagement. According to Wang and Degol (2016), there are many different measures of school climate, but together, these measures provide a clear picture of the quality and character of the school environment. School climate is modifiable and, as evidenced through multiple studies, can be greatly influenced by the principal. Because school climate is not monolithic, this study will focus on organizational supports and their significance on multiple measures of school climate with the subsets of school climate being defined as teacher student relations, delinquency and violence, and disciplinary climate. The assessment of both the school and classroom climate provides an opportunity to review multiple perspectives. These various perspectives provide district leadership the ability to review the supports principals need to positively impact school climate.

Purpose statement. The purpose of this quantitative multilevel study is to determine the organizational supports that district leadership should provide to school-level leaders to improve the school climate in their buildings. As a recipient of a school climate transformation grant, I am particularly interested in how to support building

leaders in positive changes to the climate in their buildings. Not only will this study support my district in this process, but it also has the ability to support the other recipients as well as future recipients of the grant. This study will include information gathered through the Teaching and Learning International Survey (TALIS) 2018, specifically the data from the United States. Findings may encourage the ongoing development of principals in order to increase the school climate results in their buildings.

Research questions. The following predominant research questions will guide this study: (a) to what extent does principal professional development have an impact on school climate, (b) to what extent does the school autonomy have an impact on school climate, and (c) to what extent does the provision of resources have an impact on school climate?

Delimitations. Quantitative research is utilized to quantify defined variables and generalize the results to a larger population. Quantitative research studies rely on close ended questions. This research study is no different. The study relied on the TALIS 2108 survey data. The survey does not allow the participants to explain their answers or provide additional meaning to the results. Due to this, the motives of those completing the survey cannot be investigated. This data provides a large sample but does not include the entire population.

Significance of study. School climate is a multifaceted concept that is comprised of the norms and values promote physical, social, and emotional safety at school. Because school climate is paramount to all of these aspects of the school environment, studies that address how to improve it are extremely valuable to educational leaders.

According to MacNeil, Prater, and Busch (2009), researchers have recognized that there are limited studies which establish a specific list of leadership behaviors that have a direct impact on school climate. Educational leaders need to have a sense of their own selves in order to be able to efficiently manage the school climate in their schools.

This study will add to the research for multiple stakeholders. District leaders will benefit from learning how they can support building principals in improving the school climate in their building. In addition, district leaders will know what supports, such as resources and professional development will assist the principal in the impact of school climate. They will also know how the principal's perceived autonomy influences their ability to change the climate. Building principals will benefit from being able to better advocate for the supports they need from the district personnel and will benefit from knowing what supports will improve their buildings' school climate. Students and other constituents will profit from the results of the improved school climate. Finally, policy makers and administrator development programs will gain further knowledge in what districts need to be able to improve the overall climate of schools and ultimately in student achievement. Overall, this study will affect all stakeholders in providing a better understanding of the supports needed to improve school climate.

Definition of key terms.

Autonomy—The ability of the leader to make key decisions about school improvement efforts (Honig & Rainey, 2012).

Principal Professional Development—According to Rowland (2017), professional development provides opportunities for principals to acquire and advance their knowledge and expertise which is essential for their practice.

School Climate—School climate is the collective contributions of each person of the school to the operations and the care of the physical environment and refers to concepts such as safety, relationships, environments, teaching, learning, and vision (Cohen, McCabe, Michelli, & Pickeral, 2009; Kearney, Sanmartin, & Gonzalvez, 2020).

Stakeholder Participation—School community representatives such as educators, staff, guardians, pupils, community partners, and administrators who network with others by sharing ideas, practices, and approaches to improve the outcomes for students (Wohlstetter, Malloy, Chau, & Polhemus, 2003).

Teacher-Student Relations—The interaction between the teachers and students at school (OECD, 2019).

Summary

District leaders are continually seeking methods to improve the physical environment and the operations in schools in order to advance student achievement and teacher job satisfaction. Principal leadership and development are essential for a flourishing school. The purpose of this study is to determine whether or not the provision of supports impacts teacher and student relations and whether or not those supports impact delinquency and violence as mediated by teacher student relations. Through the utilization of the TALIS data, these areas of focus can be analyzed.

Chapter 2

Literature Review

According to Cohen et al. (2009) and Thapa et al. (2013), the condition of the school's educational environment, or school climate, is a major gauge of school improvement and ultimately has the ability to predict school outcomes. Although there has been significant debate on the definition of school climate (Grazia & Molinari, 2020), a common definition of school climate as a multifaceted description including safety, school engagement and environment (Bradshaw, Waasdorp, Debnam, & Lindstrom Johnson, 2014) has been advocated by the U.S. Department of Education (USDOE). The model most commonly depicted is shown in Figure 1 and will be utilized as a basis for this literature review (Bradshaw et al., 2014).

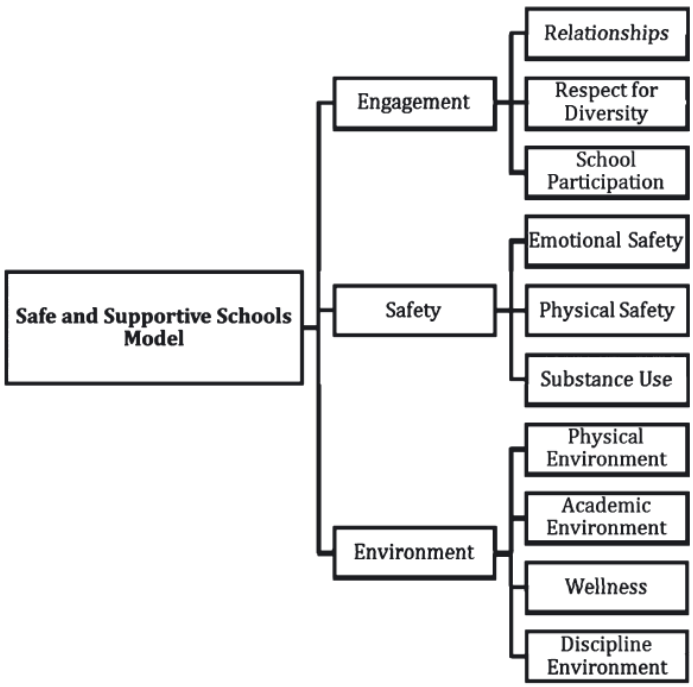


Figure 1. Definition of school climate as a multifaceted description.

In the first section of this literature review, an overview of school climate is reviewed. This is followed by a definition and a review of organizational supports for principals. Finally, the interaction between these concepts is discussed. This chapter will close with the conceptual framework that directs this study.

School Climate

Definition. School climate has been researched for over 100 years. In 1908, Perry indicated that, although often in an indirect way, moral influences cannot be overestimated when considering the culture of the schools (Perry, 1908). Later, John Dewey specified that there was importance in the social dynamics and meaningful interactions of a social group and those dynamics can shape an individual for their lifetime (Dewey, 1916). Even 100 years later, researchers have not established a conclusive definition of school climate; however, school climate is most commonly considered as a group phenomenon that describes the quality of school life (Cohen et al., 2009). Although researchers have yet to agree on a definition, the USDOE considers school climate as a three-factor model that consists of safety, engagement, and environment (Bradshaw et al., 2014).

The feelings of the school that develop from the experiences of students, staff, administrators and other members of the school community as they face school policies, procedures, and practices is known as school climate, and because it is based on an individual's perception, there can be many different school climates experienced in the school (Schweig, Hamilton, & Baker, 2019). According to Cohen et al. (2009), "school climate is the quality and character of school life. School climate is based on patterns of people's experiences of school life and reflects norms, goals, values, interpersonal

relationships, teaching and learning practices, and organizational structures" (p. 182). Essentially, school climate epitomizes all aspects of the school including the social, physical, academic, and emotional facets (Okorji, Igbokwe, & Ezeugbor, 2016). Because of this, building administrators are primarily responsible for the climate in their school (Allen, Grigsby, & Peters, 2015). However, even though current research advocates that school climate touches all of these expanses, it is often overlooked by school administrators (Lane, 2016).

Although there are inconsistencies in the definition of school climate, it is one of the most essential data-driven components of school improvement, bullying reduction, and dropout prevention strategies (Dynarski et al., 2008; Kearney et al., 2020). According to the National School Climate Council (2007), "school climate is based on patterns of people's experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures" (p. 4). Given the literature, there are many different areas of focus in regards to school climate which include physical and emotional safety, relationships, academics, institutional atmosphere, and school improvement process (Thapa et al., 2013); Cohen includes collaboration as well (Cohen et al., 2009). These domains are often broken down into smaller components such as academics which are separated into curricula, instruction, teacher training and professional development (Wang & Degol, 2016). The overlapping themes in the past 30 years of research include safety, order, and discipline; educational outcomes; social relationships; school facilities and physical environment; and school connectedness including not only engagement but also involvement (Ramsey, Spira, Parisi, & Rebok, 2016). In light of all of these various descriptions, a more global

view of school climate is appropriate. The National School Climate Council (2017) suggests that school climate is grounded in people's experiences and perceptions in school and emulates customs, principles, goals, educational practices, social relationships, and administrative configurations. The United Stated Department of Education continues to use the three comprehensive factors of environment, safety, and engagement. All schools have school climate – it is either well planned or it is haphazardly developed. The climate affects all members of the school: staff, students, parents, and community. Since school climate affects many different members of the school, the perception of school climate may differ by the role of the member.

Environment. Disciplinary climate can be defined as the students' perceptions of the classroom expectations and the teacher's approach to tackle behavioral concerns in class (Cheema & Kitsantas, 2014). A positive disciplinary climate is one of the most important aspects of a classroom. In fact, Sortkær and Reimer (2016) studied disciplinary climate and found that it had the largest influence on academic achievement and even surpassed the effect of student characteristics and socioeconomic status. The TALIS 2018 considers a positive disciplinary climate as an indicator of the teacher's classroom management skills (OECD, 2019). Classroom management has been described as an ongoing collaboration between pupils and educators and therefore is a continuing interaction among students and teachers (Brophy, 2006; Evertson & Weinstein, 2006; Gage, Scott, Hirn, & MacSuga-Gage, 2018). Classroom management has many different components, such as room arrangement, expectations, decoration of the room, the way students speak to each other, the way teachers speak to students, and the classroom routines, just to name a few (Sieberer-Nagler, 2016). In other words,

classroom management is about creating an enticing environment for students to learn. However, if the environment is not positive, it can lead to safety concerns within the classroom and school.

Safety. There is a growing awareness that school climate transformation supports the prevention of violence (Moore, Astor, & Benbenishty, 2020). Feeling safe at school promotes academic achievement, yet there is extensive research that signifies that many students do not feel safe as a consequence of the variables that characterize school climate such as bullying, physical violence, verbal abuse and intimidation (Reaves, McMahon, Duffy, & Ruiz, 2018; Thapa et al., 2012). Bullying has been the focus of a significant amount of research, and it has been noted that through the improvement of school climate, bullying can be decreased; and through the reduction of bullying, access to a strong educational program can be afforded (Cohen et al., 2009; Konishi, Miyazaki, Hymel, & Waterhouse, 2017). By consistently enforcing school discipline and having a caring and supportive staff, school safety can be positively affected (Gregory et al., 2010). In order to positively impact school's safety, the relationships between students and teachers must be strong.

Engagement.

Teacher student relationships. One of the most common indications of school climate is the connection between students and teachers (Rudasill, Snyder, Levinson & Adelson, 2018; Wilson, 2004). The quality of the interactions between individuals in a school reveals the principles, customs, and aspirations of the school (Wang & Degol, 2016). For years researchers have investigated the importance of a positive teacher-student relationship. In general, students who have a strong relationship with a teacher

generally are more connected to school and have a higher engagement in school (Archambault, Vandernbossche-Makombo, & Fraser, 2017). In fact, students who indicated that they have at least one adult to whom they are connected are thirty times more probable to be engaged in school (Hodges, 2018). However, because children change teachers on a yearly basis, these attachments are often difficult to form. But, when the relationships are strong, the student's engagement to school is increased and attendance is improved (Miranda-Zapata, Lara, Navarro, Saracostti, & de-Toro, 2018; Sheldon & Epstein, 2004); this in turn increases the student's intrinsic motivation to learn (da Luz, 2015). Students who are engaged in school are two and a half times more apt to indicate they do great in school and have excellent grades (Hodges, 2018). According to Hodges (2018), students are much more hopeful for their future as well. These relationships can also increase the likelihood that other meaningful relationships can be created in the future.

Stakeholder participation. Not only do student teacher relationships help the students connect to the school, they also help teachers connect. In fact, these positive relationships help reduce the possibility of the teacher leaving education within the first five years (Miller & Youngs, 2021). Teachers who are engaged have a reduction in absenteeism and teacher turnover (Hodges, 2018). According to Shuck, Nimon, and Zigarmi (2017), job satisfaction and engagement are interrelated and predict the degree of contribution the employee is willing to give to the organization. Not only does engagement increase satisfaction and reduce turnover, teacher engagement also has a positive impact on the students' level of engagement (Cardwell, 2011; Miranda-Zapata et al., 2018).

Providing opportunities for stakeholder participation can have a very positive impact on a school system. When the principals rely on the leaders among their staff members, it provides the staff with confidence. This in turn helps the teacher leaders support other staff members through reflective conversations, role modeling, networking, induction programs, and mentoring (Gilles, Wang, Fish, & Stegall, 2018; Gold, Evans, Earley, Haplin, & Collarbone, 2003). It is important that principals have the ability to rely on others to support them. This reliance is often on teachers who are leaders in the schools. These leaders can take on many different roles, such as resource provider, instructional coordinator, content area specialist, classroom coach, learning specialist, mentor, school leader, data coach, and above all, student (Harrison & Killion, 2007; Wenner & Campbell, 2018).

In addition to teachers, parental and family engagement is very important in students' performance and connectedness to schools. In fact, parents and families are a vital factor for advancing results for students (Marsh, Strunk, Bush, & Huguet, 2015; Nakagawa, 2000; Sanders, 2012). These relationships are established through the desire for students to succeed (Mapp & Kuttner, 2013). According to Arne Duncan, former U.S. Secretary of Education, the partnerships help teachers and parents feel connected and teachers supported (Mapp & Kuttner, 2013). Overwhelmingly, family-school engagement has a tendency to boost children's educational, behavioral, and socioemotional development (Smith, Reinke, Herman & Huang, 2019).

Organizational Supports for Principals

Researchers have focused on school resources for years, but there is limited research connecting those resources to school climate (Cohen et al., 2009; Thapa et al.,

2013; Wang & Degol, 2016). However, in order to improve educational outcomes, school resources matter (Gigliotti & Sorensen, 2018). Focused and practical distribution of resources and supports are a key factor of promoting equitable access to high-quality educational opportunities (Knight, 2019; Lynch, 2011). School organizational supports include classroom inputs such as teacher education, teacher experience, and student-teacher ratios; financial resources such as per pupil expenditures and teacher salary; and other resources such as teacher characteristics, facilities, and administrative inputs (Greenwald, Hedges, & Laine, 1996; Hanushek, 1997; Hofflinger & von Hippel, 2020). Organizational supports also include professional development and the ability to flexibly utilize those resources as needed.

According to Educational Resource Strategies, a nonprofit that partners with educational entities to transform their use of resources, there are six areas districts should deploy resources to: teacher collaboration, instruction, talent management, whole child, time and attention, and growth-oriented adult culture (Miles, Ferris, & Green, 2017). Appropriation of these supports are extremely important to the equity and efficiency of the school and yet, there is inconsistency in how they are distributed (Lane, Linden, & Stange, 2018; Monk & Hussain, 2000). Because the principal knows the demands in their building and understands the capacity of their school, they are able to better make decisions regarding resources to improve the output and meet the needs of the community (Hanushek, Link, & Woessmann, 2013). "Leaders at all levels of the education system are charged with making decisions about how to effectively distribute and leverage resources to support teaching and learning" (Lynch, 2011) because of this, it is essential

that those leaders are provided appropriate professional development to understand how to efficiently utilize their resources to best meet the needs of students and staff.

Professional development. A key component to positive school environments is the development of school leadership (Pechota & Scott, 2020). Today all occupations meet demands to acclimate to advancing challenges and expectations (Manna, 2015). All levels of the school district must have a continual emphasis on building capacity to sustain transformation (Augustine-Shaw, 2018). Through the concentration on learning, "leaders shift both their own focus and that of the school community from inputs to outcomes and from intentions to results" (DuFour, 2002). The school leader is essential, but only if that person understands that the purpose of their position is to stimulate both student and teacher learning (DuFour, 2002). Not only do the principals need to have the knowledge, but they also must have the capability to assimilate their knowledge, talents, and beliefs into focused action functioning with and through other specialists (Kochan, Bredeson, & Riehl, 2005; Rowland, 2017). This requires specific professional development which is focused more on transformational activities and professional growth.

A school's leader impacts many aspects of the education of the students in the building. In fact, the impact of principal leadership on student learning is only second to teaching itself (Leithwood, Louis, Anderson, & Wahlstrom, 2004), however principal leadership is mediated through the leadership of the teacher (Sebastian, Huang, & Allensworth, 2017). Therefore, the expertise and talents of the principals and teachers provide the foundation and expected attention for schools (Le Floch et al., 2016). Principals influence the teachers, the students, the facilities, and the culture of a building

(Coelli & Green, 2012). Because of this, it is essential that they have the skills and talents to oversee these aspects.

According to the School Leaders Network, principals are often placed in schools without sufficient sustained support, and this impacts not only their ability to lead, but also their staff and students (Sangenito, 2014). Unfortunately, relevant professional development specific for principals remain elusive, but researchers are starting to identify the unique needs of principals; their roles have deepened in both the areas of operational procedures, such as budgeting and facilities and instructional leadership (Lazenby, McCula, & Marks, 2020). In order to effectively support the needs of the building, principals need to continually access high quality professional development (Blasé & Blasé, 1999; Davis, Darling-Hammond, LaPointe, & Meyerson, 2005; Fink & Resnick, 2001; Koonce, Pijanowski, & Bengtson, 2019; Leithwood et al., 2004; Sangenito, 2014). According to the National Association of Secondary School Principals' position statement on principal training, "district leaders should communicate explicit expectations for principal leadership and ensure that professional development, mentoring, and ongoing support for principals are aligned to these expectations and link school or district mission and needs" (NASSP, 2020). In addition, NASSP recommended that principals participate in ongoing mentoring from successful leaders. Principals value networking and interaction with colleagues, and in fact see it as one of the most beneficial, profitable, and relevant forms of professional development; the shared reflection and sharing of resources is described as a thriving and efficient method for self-improvement (Lazenby et al., 2020). Unfortunately, although the research shows that it is essential for principals to receive on-going professional development, most of the

principals do not have access to the necessary learning for a variety of reasons (Sangenito, 2014). These reasons include a lack of availability, attention, priority, and opportunities; and when they do take part in professional development, it is often that which is targeted for specifically for teachers (Rowland, 2017). With the appropriate networking and professional development, principals will have the skills to be successfully autonomous in their decision-making and use of resources.

School autonomy. There are three characteristics that efficacious principals have: an emphasis on teaching and learning; the ability to produce a prosperous, united staff; and the aptitude to generate a positive culture (Whitmire, 2012). Whitmire further added that autonomy is one of the most important factors that affect the ability for principals to be successful because when they are autonomous, they have the capability to realign existing resources such as time and staffing and leverage additional resources. Leaders who are closer to the situation have the ability to make decisions that directly affect them or their stakeholders.

For years businesses such as Google, IBM, and 3M have been providing autonomy for managers throughout the system, specifically in the areas of staffing and strategic planning (Dillon, 2011; Peters & Waterman, 1984). Although schools have been practicing decentralization strategies for the decision-making process, existing studies indicate the procedures do not always lead to more decision-making power for the principals (Wong, Coburn & Kamel, 2020).

School autonomy can be defined as having the authority to make decisions about key decisions and school improvement in order to better develop approaches to teaching and learning that will be based on strengths and needs of the students and meet the unique

needs of the school (Dou et al., 2017; Honig & Rainey, 2012). These decisions center on matters such as staffing, budget, curriculum, and educational policies. According to the Thomas B. Fordham Institute (2006), many of these decisions are made at the district level, leaving principals in a weak position. Often principals do not have the ability to make tradeoffs and utilize their funds differently to best meet the needs of their students and staff (Thomas B. Fordham Institute, 2006; Honig & Rainey, 2012). In the past, principals had the autonomy to do so, now administrators need to give that autonomy back to the principals in order to strengthen their role (Dou et al., 2017; Goodwin, Cunningham, & Eagle, 2005).

If principals are to be held accountable for results, they need to have autonomy over their resources. Principals feel the pressure of the responsibility that is placed on their shoulders, yet without autonomy, they also feel a lack of power to make necessary adjustments. This discrepancy is known as the autonomy gap (Adamowski & Petrilli, 2007; Adamson, 2012; Dou et al., 2017). Central office administrators can help principals close the autonomy gap through the implementation of site-based management techniques. By turning over some of the decision-making power such as personnel, discipline, curriculum, educational policies, and budget, this allows the principals the opportunity to involve stakeholder engagement and distribute their leadership to have the flexibility needed to meet the needs of their school (Goodwin et al., 2005; Modeste & Kelley, 2020).

Other resources. Principals not only need autonomy over professional development, but they also need it over the other resources provided by the district such as human resources, time, and funds (Bowers, Blitz, Modeste, Salisbury, & Halverson

2017; Honig & Rainey, 2012). Often these resources, which are further explained later, are scarce, so it is essential that they are utilized in the most impactful manner. Through the empowerment of principals, it is possible to strategically invest and organize the critical resources (Miles, 2019). Districts that presented improvement in student performance demonstrated that the district generally reformed the allocation of resources such as time, money, staff, and community resources (Modeste & Kelley, 2020; Pan, Rudo, Schneider, & Smith-Hansen, 2003). The Wallace Foundation revealed that highly supportive districts have five strategies in regards to resources. These strategies include providing principals greater autonomy over time, structures, and teachers; involving principals in budgeting discussions; differentiating supports to buildings based on needs; treating time as the most dire resource for all stakeholders; and encouraging principals to cultivate resources outside of the school (Bottoms & Schmidt-Davis, 2010).

Human resources are possibly the most valuable resource a district has and includes all the people, and their skills and talents, who work for the district (Acquiring, Allocating & Managing Resources in Education, 2017). The strategic deployment of staff can enable schools to achieve their goals (Dou et al., 2017; Wright & McMahan, 2011). The deployment of human resources should prioritize equity. Plecki et al. (2009), indicated that there are several methods to district leaders can support building principals in the area of human resource development and these include: forming leadership positions at the school level, hosting student teachers, shifting assignments, developing support teams, matching talents to tasks, reallocating instructional time grounded on students' needs, increasing collaboration, and improving instructional coaching. Principals know their buildings and their needs, with the autonomy to utilize their staff

flexibly, they are empowered to meet the unique needs of the students in their building (Heffernan & Pierpoint, 2020; Plecki et al., 2009).

The work of the school administrators has become more complex; therefore, time is a valuable resource, and the lack of it is one of the most difficult challenges encountered by school administrators (Sebastian, Camburn, & Spillane, 2018; Watts & Castle, 1993). So often principals feel they do not have enough time to manage all of their responsibilities let alone to collaborate with peers and participate in professional development. Meanwhile, it should be noted that educators need considerable time as a group to establish new practices and participate in shared problem-solving (Garcia Torres, 2019; Miles & Darling-Hammond, 2020). Time is essential for a school to become a learning organization (Garcia Torres, 2019; Leithwood et al., 2020). "Organizational learning is more likely to occur in schools where staff are looking out for opportunities to increase knowledge and improve skills and are provided with sufficient resources and time to develop professionally" (Silins & Mulford, 2002, p. 444). Providing the principals with the flexibility of utilizing the resource of time is essential.

According to Ouchi, nationwide, principals only control an average of 6.1% of the budget that is spent on their schools (Viadero, 2009). Schools in the United States have been slower to adopt site-based management because district leadership struggles with developing an applicable formula to allocate resources (Butler, 2006), however, in recent years, this practice has become more frequent but to varying degrees (Steinberg & Cox, 2017). The allocation of these resources is more than just assigning certain fiscal amounts to each program or school, but it is also an examination of how these funds are

translated into actions and results for students based on data (Lynch, 2011; Steinberg & Cox, 2017).

According to OECD, the absence of autonomy in the utilization of resources can constrain the schools' ability to shape their school and may create inefficiency in the utilization of those resources (OECD, 2017). The report further indicates that the autonomy can provide the schools with the flexibility to meet the needs of the students (OECD, 2017). Leaders need to be able to examine the use of resources such as human resources, time, and funds and allow principals the autonomy to flexibly utilize those productively based on data (Lynch, 2011) and improve school climate.

Organizational Supports and School Climate

There are three crucial components to stakeholder participation – autonomy, accountability, and capacity (Solly, 2018). With the participation from multiple stakeholders, school climate can be well supported. By sharing leadership, teachers, staff, parents, students, and administrators can collaborate to solve problems and create an engaging school climate that enhances student performance. According to the University of Chicago Consortium on School Research, principals most influence student achievement by fostering strong school climates, and to do so, it is necessary to support teacher leadership and stakeholder participation (Allensworth & Hart, 2018). Finally, principals need to have the opportunity to allocate resources to best fit the needs of the school and its students.

Organizational efficiency can be achieved by providing building leaders with greater autonomy and decision-making power over the resources in their buildings. The ability to assign existing resources is one of the most productive factors for principals to

be successful; therefore, it is an area that district administrators need to provide a focus and guidance. This practice has been done in the business community for years but has yet to become well defined in education (Dillon, 2011; Peters & Waterman, 1984; Steinberg & Cox, 2017). Trust is an essential component of any relationship and distinguished school leaders need trust from the district administrators that they will allocate the resources effectively. District leaders need to provide the autonomy over time, human resources, and financial resources as well as appropriate professional development for the principal and the teachers (Bottoms & Schmidt-Davis, 2010; Dou et al., 2017). Increased autonomy in staffing decisions is essential to ensure the principals have the right people on board for their building. Although principals may never be fully autonomous, when given the ability to self-manage their school and resources as much as possible, they can increase productivity.

Because principals hold a key role in initiating changes in schools, they are often also the ones who are held accountable for the results. Regardless of how stakeholder participation is utilized, there is one solitary individual who endures the final responsibility for the school (Earley & Bubb, 2013; Spillane & Lee, 2014; Wildy, Forster, Louden, & Wallace, 2004). Accountability must be tied to a commitment to learning, development, and, ultimately, student achievement. However, the principal can only indirectly impact student achievement through school climate (Hallinger, Bickman, & Davis, 1996; Jones & Shindler, 2016). Therefore, it is important that leaders be skillful in implementing accountability practices while supporting the teachers and distributing the leadership to the staff.

Another key component to the principal having an influence on school climate is capacity. Capacity has many different dimensions. First, the principal needs to be able to have the knowledge and expertise to effectively deploy resources. This requires access to high quality professional development in many different areas, not just those that are designed for teachers (Rowland, 2017; Sangenito, 2014). Next, the principal needs the time to dedicate to the improvement of school climate and the staff. Principals' jobs are very complex, if not carefully managed, principals' time can become absorbed into administrative tasks or meetings that are not meaningful or impactful (Bowers et al., 2017; King Rice, 2010). The principal also needs to build a team to support other teachers (Dufour & Marzano, 2012), even seasoned teachers need to opportunities for growth and development (Bressman, Winter, & Efron, 2018). This is essential for their work with distributed leadership. Finally, principals need to be knowledgeable about instructional practices, curriculum, and behavioral supports and be able to support teachers in those areas. Capacity is a component of distributed leadership that is very important.

Summary. Because school climate touches every aspect of the educational system, principals need to have the skills and resources to energetically address the climate of their buildings and the ability to flexibly use those resources to best meet the needs of the school. Through distributed leadership, they can support other's leadership capabilities and involve multiple stakeholders. This provides additional support for principals and offers additional assistance for staff.

The supports provided by district leaders can make a difference on the principal's capacity to positively change school climate as well. These supports include not only

professional development and autonomy but also other resources such as human resources, time, and money. Principals know their building the best. They know the strengths and weaknesses. Therefore, they are a key component in positively influencing their school's climate. In the end, each of these components is necessary to bolster all members of the school community and, in turn, decisively affect student achievement.

Conceptual Framework

In this section, I will provide the conceptualization of the relationships between organizational supports and school climate. This framework outlines the design of this study applied to answer the three research questions.

Numerous research studies have shown that a principal's leadership has a significant impact on the school's climate. To influence the school's climate, the principal requires the appropriate supports and the ability to utilize the resources and supports based on the needs of the building. Principals also need to work with the teachers to develop a common approach to the safety of individuals, orderly environment, responsiveness to individual needs, and collaboration between staff, students, and parents. The factors considered in this study include school climate and organizational supports for principals.

Information concerning the impact that organizational supports have on school climate can be evaluated through the Teaching and Learning International Survey (TALIS) 2018 data. The survey collects data regarding organizational supports, distributed leadership, and school climate. In addition, it collects data regarding principal autonomy. The sample utilized in this study included 2,650 US teachers and 166 US principals. The following predominant research questions will guide this study: (a) to

what extent does principal professional development have an impact on school climate, (b) to what extent does the school autonomy have an impact on school climate, and (c) to what extent does the provision of resources have an impact on school climate?

The conceptual framework is shown in Figure 2.

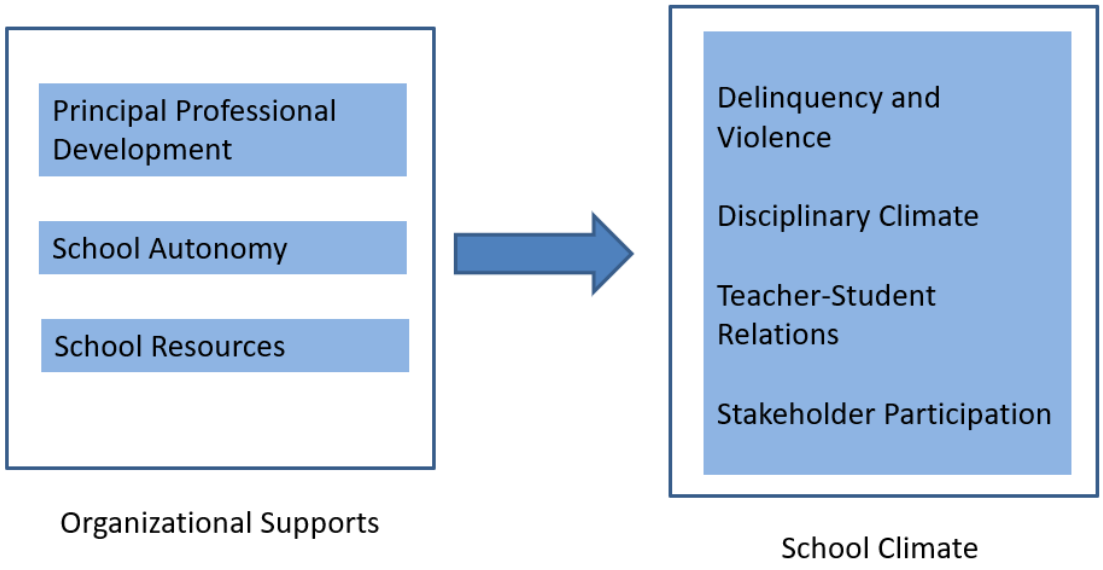


Figure 2. Conceptual framework.

Chapter 3

Methodology

Quantitative research is intended to gather statistical data from a group of people, and then generalize the results to larger groups and ultimately provide objective and definitive answers to questions. According to Gay, Mills and Airasian (2009), research needs to be verified through direct observation and measurement to be considered as meaningful. This chapter provides the methodology, purpose, research questions, sample population, data collection, and variables. In addition, the procedures for analysis and the statistical model are also presented. To determine whether principal professional development has an impact on school climate; whether school autonomy has an impact on school climate; and whether the provision of resources has an impact on school climate, a quantitative analysis of data from the Teaching and Learning International Survey (TALIS) 2018 data was completed. The TALIS is a survey that is completed by teachers and principals. Some of the outcomes of the questionnaire review educational variables and relationship variables as well.

Purpose and Research Questions

Districts are charged with improving school outcomes (Brown, 2016) and, because of this, it is important for district leaders to know what organizational supports building leaders need in order to improve school climate. "Given the dichotomy between expectations and needs, between accountability and inclusiveness, it is axiomatic that principals must have the autonomy to be flexible, to build the relationships necessary to reach school goals, and to allocate resources to support those relationships" (Goodwin et al., 2005, p. 12). In turn, principals need to have the knowledge and expertise to

efficiently utilize the resources at their hand, such as staffing and funding. This knowledge and expertise must be developed through targeted professional development specific to principals and educational leaders. When these resources are successfully employed, the climate of the school is ultimately impacted.

School climate not only enhances student outcomes, but it also prevents violence, and reduces dropout rates (Coulston & Smith, 2013). A great principal who maintains a healthy climate allows not only the students but also the teachers to reach their full potential (Cole-Foppe, 2016). According to the National Center on Safe and Supportive Learning Environments (2017), there are three areas that should be a focus for school climate: engagement, safety, and school environment. School climate affects every aspect of a school, so it influences multiple measures across multiple levels. Together these measures (teacher student relationships, disciplinary climate, delinquency and violence, stakeholder participation) provide the representation of the climate in the school. This study focused on what organizational supports district leaders can provide to impact that climate.

The following research questions were the predominant focus of this study:

1. To what extent does principal professional development have an impact on school climate?
2. To what extent does the school autonomy have an impact on school climate?
3. To what extent does the provision of resources have an impact on school climate?

Data Source, Instruments, Sample, and Population

The sample includes educators, both teachers and principals, from the United States who participated in the Teaching and Learning International Survey from 2018. The Organisation for Economic Co-Operation and Development (OECD) collected data on the environments, working conditions and workforce utilizing a consistent framework (OECD, 2019). The TALIS divulges a substantial amount of evidence regarding the individualities of schools and educational systems across the world. The Organisation for Economic Co-operation and Development (OECD) Teaching and Learning International Survey (TALIS 2018) collects data from a variety of countries to review the environments, working conditions, and workforce using a consistent framework (OECD, 2019).

The OECD aims to provide extensive information to practitioners, researchers, and policy makers describing conditions in schools for both principals and teachers. In addition, the TALIS provides information on crucial issues such as job satisfaction, self-efficacy, school climate, professional development, leadership practices, autonomy and more. Thus, I chose TALIS 2018 data to answer my research questions for this study.

OECD used two questionnaires to collect data for the TALIS; one was developed for principals and the other for teachers, and these questionnaires were offered either online or paper and pencil. Countries that participated in this survey could also survey ISCED 1 and 3; however, this study only utilized the data from ISCED 2. The sampling plan indicated that OECD utilized a stratified two-state stage probability sampling design. First, 200 schools were randomly selected from each country followed by a minimum of 20 teachers who were randomly selected from the entire list of teachers from their

building. However, schools that only specialize in teaching students with special needs or those which are struck by a national disaster were excluded to the greatest extent possible. Substitute teachers, teachers on leave and teachers who only taught adults were also excluded. Countries that participated had the option of sampling additional schools and teachers. Prior to conducting the analysis for this study, the survey data from both the teachers and principals in the United States were merged using the key field of IDSCHOOL. To conduct the analysis, the public data was downloaded from the OECD website, and prepared in Statistical Package for the Social Sciences (SPSS) 23, and Mplus (8.0) was utilized for the analysis.

The TALIS collects data from lower secondary schools (grades 6-9). Approximately 260,000 teachers and 15,000 schools from 48 countries completed the assessment in 2018 (OECD, 2019). Since educational practices vary internationally, this research study only utilized the data from the United States. There were 2,650 teachers and 166 principals that completed the surveys from the United States. I wanted to know specifically about supports and their effects in the United States.

Variables and Measures

Dependent variables. In this study, multiple measures of school climate are considered. These include delinquency and violence, disciplinary climate, teacher student relations, and stakeholder participation. These areas were addressed using the survey questions which were administered to teachers.

Delinquency and violence. First, the principals' perceived school climate refers mainly to safety and engagement. In the TALIS questionnaire, there is one scale from the principal perspective that resulted from survey questions. This included school

delinquency and violence (T3PDELI) which was derived from the question regarding how often various school delinquency issues occur among students (TC3G30). The question was, "in this school, how often do the following occur". This was followed by four statements: vandalism and theft, intimidation or bullying among students or other forms of verbal abuse, physical injury caused by violence among students, and intimidation or verbal abuse of teachers or staff. The responses were measured by a Likert scale of one to five with one being never, two less than monthly, three monthly, four weekly, and five daily.

Disciplinary climate. The next set was on disciplinary climate followed by teacher student relations. These items were selected because they characterized the relationship between students and teachers at the school level. The teacher perceived disciplinary climate (T3DISC) was from a set of questions regarding student behavior (TT3G41): "how strongly do you agree or disagree with the following statements about this target class." This was followed by a Likert scale of one to four with one being strongly disagree, two disagree, three agree, and four strongly agree. The individual questions can be found in Table 1.

Teacher student relations. The perceived teacher student relations (T3STUD) variable was from questions regarding interactions between teachers and students (TT3G49). This question was "how strongly do you agree or disagree with the following statement about this target class." Again, this was followed by a Likert scale of one to four with one being strongly disagree, two disagree, three agree, and four strongly agree. The individual questions can be found in Table 1.

Table 1

Item Wording for School Climate Scales

T3DISC: Teachers' perceived disciplinary climate	
TT3G41: How strongly do you agree or disagree with the following statements about this target class? Response options: "Strongly disagree" (1), "Disagree" (2), "Agree" (3), "Strongly Agree" (4).	
TT3G41A	When the lesson begins, I have to wait quite a long time for students to quieten down
TT3G41B*	Students in this class take care to create a pleasant learning atmosphere
TT3G41C	I lose quite a lot of time because of students interrupting the lesson
TT3G41D	There is much disruptive noise in this classroom
T3STUD: Teacher student relations	
TT3G49: How strongly do you agree or disagree with the following statements about what happens in this school? Response options: "Strongly disagree" (1), "Disagree" (2), "Agree" (3), "Strongly Agree" (4).	
TT3G49A	Teachers and students usually get on well with each other.
TT3G49B	Most teachers believe that the students' well-being is important.
TT3G49C	Most teachers are interested in what students have to say.
TT3G49D	If a student needs extra assistance, the school provides it.
T3STAKE: Participation among stakeholders, teachers	
TT3G48: How strongly do you agree or disagree with these statements, as applied to this school? Response options: "Strongly disagree" (1), "Disagree" (2), "Agree" (3), "Strongly Agree" (4).	
TT3G48A	This school provides staff with opportunities to actively participate in school decisions.
TT3G48C	This school provides students with opportunities to actively participate in school decisions.
TT3G48D	This school has a culture of shared responsibility for school issues.
TT3G48E	There is a collaborative school culture which is characterised by mutual support.

* Item was reverse coded.

Stakeholder participation. Finally, stakeholder participation (T3STAKE) was from the question regarding stakeholder participation in the school decision-making process and was from (TT3G48). This question was "how strongly do you agree or disagree with

these statements, as applied to this school?" Once more, this was followed by a Likert scale of one to four with one being strongly disagree, two disagree, three agree, and four strongly agree. The individual questions can be found in Table 1.

Independent variables. There are four independent variables considered in this study and together were considered as organizational supports: principal professional development, personnel resources, resources, and autonomy.

Principal Professional Development. The first independent variable is principal professional development which comes from a question regarding barriers to professional development (TC3G09). The items listed in Table 2 indicate the questions and responses options for those questions. This latent variable was developed from five questions on the principal questionnaire. These questions surrounded the barriers to principals' participation in professional development.

Table 2

Item Wording for Principal Professional Development Barriers

Principals' perceived barriers to participation in professional development	
TC3G09: How strongly do you agree or disagree that the following present barriers to your participation in professional development? Response options: "Strongly disagree" (1), "Disagree" (2), "Agree" (3), "Strongly Agree" (4).	
TC3G09B*	Professional development is too expensive
TC3G09C*	There is a lack of employer support
TC3G09D*	Professional development conflicts with my work schedule
TC3G09F*	There is no relevant professional development offered
TC3G09G*	There are no incentives for participating in professional development

* These items were reverse coded

Personnel Resources and Resources. The TALIS 2018 also measured items for school personnel and resources which are from two derived variables from the question regarding the school's capacity (TC3G29): lack of pedagogical personnel (T3PLACPE) which is (TC3G29 A-C) and lack of resources (T3PLACRE) which is (TC3G29D-G, I, J & M). Table 3 indicate the questions and responses options for those questions.

Table 3

Measured Items for School Resources

T3PLACPE: Lack of pedagogical personnel	
TC3G29: To what extent is the school's capacity to provide quality instruction currently hindered by any of the following issues? Response options: "Not at all" (1), "To some extent" (2), "Quite a bit" (3), "A lot" (4).	
TC3G29A	Shortage of qualified teachers
TC3G29B	Shortage of teachers with competence in teaching students with special needs
TC3G29C	Shortage of vocational teachers
T3PLACRE: Lack of resources	
TC3G29: To what extent is the school's capacity to provide quality instruction currently hindered by any of the following issues? Response options: "Not at all" (1), "To some extent" (2), "Quite a bit" (3), "A lot" (4).	
TC3G29D	Shortage or inadequacy of instructional materials (e.g. textbooks)
TC3G29E	Shortage or inadequacy of digital technology for instruction (e.g. software, computers, tablets, smart boards)
TC3G29F	Insufficient Internet access
TC3G29G	Shortage or inadequacy of library materials
TC3G29I	Shortage or inadequacy of instructional space (e.g. classrooms)
TC3G29J	Shortage or inadequacy of physical infrastructure (e.g. classroom furniture, school buildings, heating/cooling, and lighting)
TC3G29M	Shortage or inadequacy of necessary materials to train vocational skills

These items were created by recoding the index if all items were marked as "not at all" and "to some extent" as a value of 1, recoding the index if all items were marked as "quite a bit" or "a lot" as a value of 3 and all other combinations as coded as a 2. Finally, these two variables were then recoded as 1 indicating a problem, 2 indicating a bit of a problem, and 3 indicating not a problem and then renamed as T3PLACPE and T3PLACRE. Finally, these two variables were regressed into PNRS. When the model was executed, the PNRS did not have a significant effect; therefore, the two variables were utilized separately in a regression model.

School Autonomy. The final latent variable is school autonomy, and it is created from four derived variables: curriculum, budgeting, staffing, and educational policies. Autonomy for curriculum (T3PAUTC) was derived from TC3G20I, TC3G20J, and TC3G20K. Autonomy for budgeting (T3PAUTB) was derived from TC3G20C, TC3G20D, and TC3G20E. Autonomy for staffing (T3PAUTS) was derived from TC3G20A and TC3G20B. Finally, autonomy for educational policies (T3PAUTP) was derived from TC3G20F, TC3G20G, TC3G20J, and TC3G20K. These questions are denoted in Table 4.

The first step was to create a new variable for each of the items, which was 55 new variables. If the item had at least one response that was checked, then it was coded to zero. The second step coded the variable to -1 if the "other" box was checked, but no other boxes were checked. Third, if the responses included both items from one through four as well as the "other" box, the responsibility was considered as a shared responsibility, so it was coded to 0. Fourth, if there was at least one item checked in the

Table 4

Measured Items for School Autonomy

T3PAUTC: School autonomy for curriculum	
TC3G20: Regarding this school, who has significant responsibility for the following tasks? A "significant responsibility" is one where an active role is played in decision making. Response options: Checked (1), Not Checked (2)	
TC3G20I: Choosing which learning materials are used	
TC3G20I1	Principal
TC3G20I2	Other members of the school management team
TC3G20I3	Teachers (not as a part of the school management team)
TC3G20I4	School <governing board>
TC3G20I5	<local, municipality/regional, state, or national/federal> authority
TC3G20J: Determining course content, including <national/regional> curricula	
TC3G20J1	Principal
TC3G20J2	Other members of the school management team
TC3G20J3	Teachers (not as a part of the school management team)
TC3G20J4	School <governing board>
TC3G20J5	<local, municipality/regional, state, or national/federal> authority
TC3G20K: Deciding which courses are offered	
TC3G20K1	Principal
TC3G20K2	Other members of the school management team
TC3G20K3	Teachers (not as a part of the school management team)
TC3G20K4	School <governing board>
TC3G20K5	<local, municipality/regional, state, or national/federal> authority
T3PAUTB: School autonomy for budgeting	
TC3G20: Regarding this school, who has significant responsibility for the following tasks? A "significant responsibility" is one where an active role is played in decision making. Response options: Checked (1), Not Checked (2)	
TC3G20C: Establishing teachers' starting salaries, including setting pay scales	
TC3G20C1	Principal
TC3G20C2	Other members of the school management team
TC3G20C3	Teachers (not as a part of the school management team)

Table 4 continues

T3PAUTB: School autonomy for budgeting (continued)	
TC3G20C4	School <governing board>
TC3G20C5	<local, municipality/regional, state, or national/federal> authority
TC3G20D: Determining teachers' salary increases	
TC3G20D1	Principal
TC3G20D2	Other members of the school management team
TC3G20D3	Teachers (not as a part of the school management team)
TC3G20D4	School <governing board>
TC3G20D5	<local, municipality/regional, state, or national/federal> authority
TC3G20E: Deciding on budget allocations within the school	
TC3G20E1	Principal
TC3G20E2	Other members of the school management team
TC3G20E3	Teachers (not as a part of the school management team)
TC3G20E4	School <governing board>
TC3G20E5	<local, municipality/regional, state, or national/federal> authority

T3PAUTS: School autonomy for staffing

TC3G20: Regarding this school, who has significant responsibility for the following tasks? A "significant responsibility" is one where an active role is played in decision making. Response options: Checked (1), Not Checked (2)	
TC3G20A: Appointing or hiring teachers	
TC3G20A1	Principal
TC3G20A2	Other members of the school management team
TC3G20A3	Teachers (not as a part of the school management team)
TC3G20A4	School <governing board>
TC3G20A5	<local, municipality/regional, state, or national/federal> authority
TC3G20B: Dismissing or suspending teachers from employment	
TC3G20B1	Principal
TC3G20B2	Other members of the school management team
TC3G20B3	Teachers (not as a part of the school management team)
TC3G20B4	School <governing board>
TC3G20B5	<local, municipality/regional, state, or national/federal> authority

Table 4 continues

T3PAUTP: School autonomy for educational policies

TC3G20: Regarding this school, who has significant responsibility for the following tasks? A "significant responsibility" is one where an active role is played in decision making. Response options: Checked (1), Not Checked (2)	
TC3G20F: Establishing student disciplinary policies and procedures	
TC3G20F1	Principal
TC3G20F2	Other members of the school management team
TC3G20F3	Teachers (not as a part of the school management team)
TC3G20F4	School <governing board>
TC3G20F5	<local, municipality/regional, state, or national/federal> authority
TC3G20G: Establishing student assessment policies, including <national/regional> assessments	
TC3G20G1	Principal
TC3G20G2	Other members of the school management team
TC3G20G3	Teachers (not as a part of the school management team)
TC3G20G4	School <governing board>
TC3G20G5	<local, municipality/regional, state, or national/federal> authority
TC3G20H: Approving students for admission to the school	
TC3G20H1	Principal
TC3G20H2	Other members of the school management team
TC3G20H3	Teachers (not as a part of the school management team)
TC3G20H4	School <governing board>
TC3G20H5	<local, municipality/regional, state, or national/federal> authority

first four and no other authority responsibility the task was considered a school responsibility and was coded as $^{+}1$. The next step was to recode the new variables: $^{-}1$ was coded to 1, 0 was coded to 2, and $^{+}1$ was coded to 3. The school was considered to be autonomous if more than half of the newly created variables were classified as autonomous. On the other hand, if less than half were classified autonomous, the school was considered to be not autonomous. Finally, if neither of these were true, then the school was classified as mixed. Once completed, a latent variable of SCHAU was created through the regression of the four autonomy variables: T3PAUTC, T3PAUTS,

T3PAUTB, and T3PAUTP. Therefore, a larger mean score denotes a higher level of autonomy at the school level for that component.

The variables considered in this research can be found in Appendix A.

Data Analysis Procedures

To determine to what extent principal professional development has an impact on school climate; to what extent school autonomy has an impact on school climate; and to what extent the provision of resources has an impact on school climate, several statistical analyses were conducted.

All data from the TALIS were downloaded from the OECD public data website and were entered into IBM Statistical Package for the Social Sciences (SPSS) and Mplus 8.0. SPSS allows researchers to analyze data and solve complex problems. It allows advanced statistics to be conducted on complex data sets. Mplus 8.0 allows more complex analyzation of the data through exploratory factor analysis, structural equation modeling, and multilevel analysis.

For each of the variables, descriptive statistics were obtained through the SPSS program. These included the mean, mode, range, and frequencies. Once this was conducted, the framework was analyzed.

To comprehend the relationship between principal supports and school climate, each area has been operationalized as a latent construct. This allows data from multiple levels to be analyzed on their particular level and still accommodate for the echelons which are the nature of schools. The multilevel model provides a formidable framework for analyzing data at both the nested levels and those that are not nested. This process allows for attention to individual perception, which is essential in this particular study,

and teacher responses to align to their principal's responses rather than to all principal responses which would occur using other forms of analysis.

Indices and latent scales development procedures. This study applied three methods to develop the variables. These methods included (a) simple indices, (b) latent construct development through a confirmatory factor analysis (CFA), and (c) multilevel modeling through a multilevel confirmatory factor analysis (MCFA)**.**

Simple categorisation indices. Simple categorical indices are formed using the recoding of the frequencies of the items. In some situations, a CFA is not an appropriate method to create a latent variable. In these situations, other methods must be utilized. This study utilized one of these methods which is known as simple categorization indices. According to the TALIS 2018 Technical Report, indices were computed through a review of each item utilized to create the latent variable (2019). The responses were recoded and an index was created. For each index, a criterion was developed. Finally, indices were then coded using the recoding of the frequency of the items.

The first method was the simplest method in which an arithmetical transformation was utilized to enhance the analysis of characteristics which were observable. The TALIS 2018 computed the indices for pedagogical resources (T3PLACPE) and resources (T3PLACRE) in this manner. First, responses were coded as one for those that all of the responses were either not at all or to some extent; for those that were quite a bit or a lot were coded as a three; and those that were mixed were coded as a two. These indices were then coded as not a problem (1), a bit of a problem (2), and a problem (3). These items were then reverse coded for this study.

Scale development using CFA. Following the use of simple indices, latent constructs employed in this study were established by creating and evaluating measurement models formed through CFA.

Latent constructs were developed through multiple methods. First, an extensive literature review was conducted. This review supported identification and selection of the variables that were utilized to construct the latent variables. Next, the TALIS 2018 Technical Report (OECD, 2019) was reviewed to support the identification and selection of the variables that were utilized to construct the latent variables.

Latent variables are developed to measure an underlying characteristic that the researcher is not able to observe or measure them directly. These variables are also known as factors. A confirmatory factor analysis (CFA) is developed to evaluate a hypothesis or theory about the latent variables and allows a researcher to investigate causal relationships among latent and observed variables. A confirmatory factor analysis is the definition of constructs in terms of their observed indicators which are then examined through proposed relationships to determine whether or not the hypothesized model is definite (Heck & Thomas, 2015). Single level CFAs are performed on items which come from only one level of the organization, whereas multi-level CFAs (MCFAs) are performed on items which come from more than one level of the organization. Single level CFAs were conducted to develop the latent measures of school autonomy, resources, professional development, and delinquency and violence.

The first latent variable School Autonomy is based on an application of a single-level CFA to a set of derived variables created by the TALIS 2018: autonomy for

staffing, curriculum, budgeting, and policies. Figure 3 is the CFA model diagram for school autonomy.

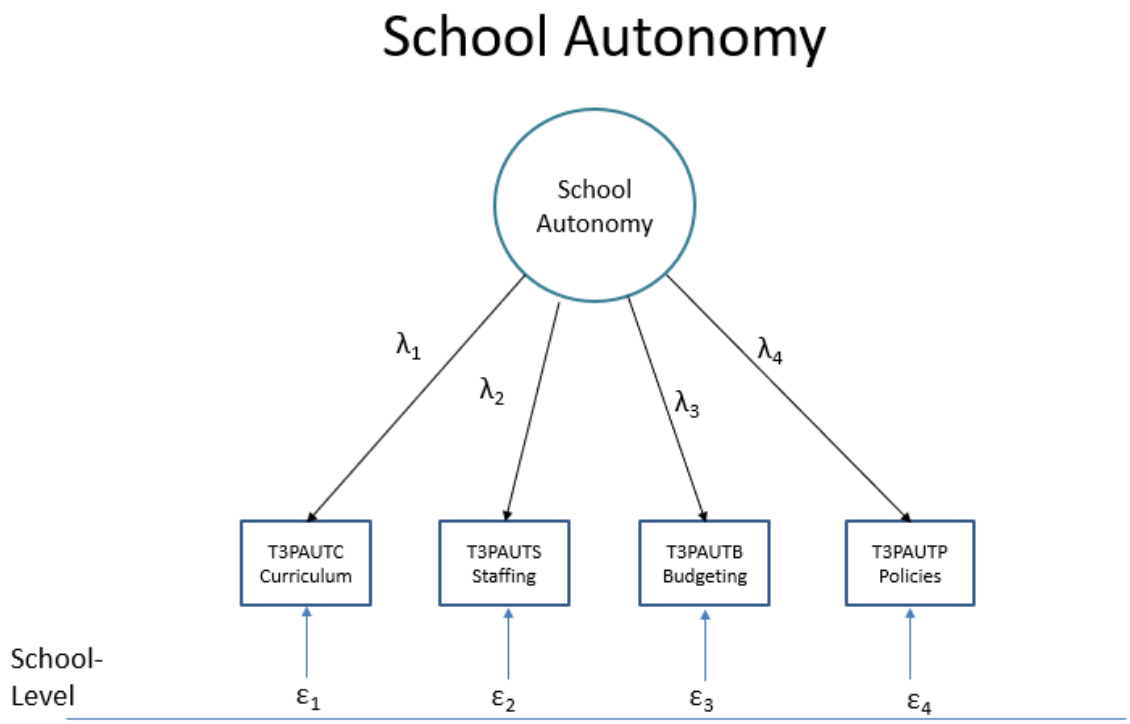


Figure 3. CFA model diagram of school autonomy.

The next two latent variables developed using a single-level CFA model are principal professional development and delinquency and violence. Because so few variables were utilized for this analysis, the two variables were considered together. Figure 4 is a display of the variables utilized in this analysis.

Scale development using MCFA. The analysis of clustered data structures is prevalent in the investigation of social structures such as in an educational system. When items are correlated, such as all of the teachers' responses from the same school,

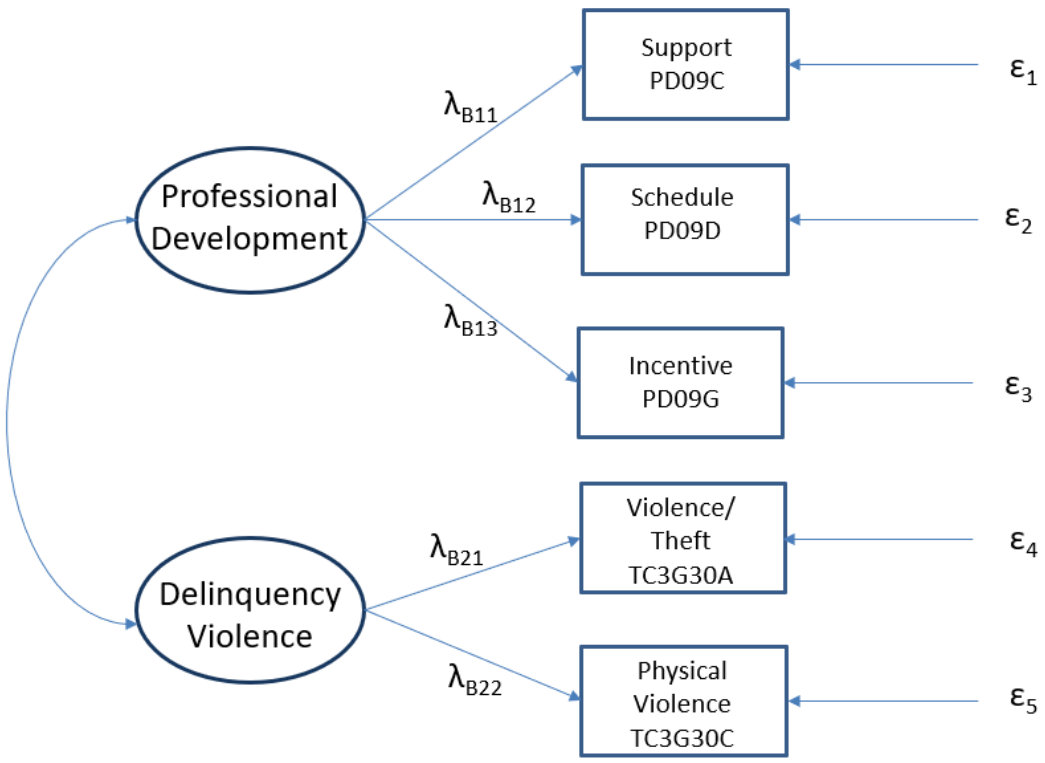


Figure 4. CFA model diagram of professional development and delinquency/violence.

the fundamental assumption of independence is violated (Keith, 2019). In these cases, the researcher needs to analyze the data both within the levels and between the levels. Teachers have individual classrooms, those classrooms are in schools, and those schools are in districts. When this occurs, a multilevel technique is required to analyze the data. According to Keith (2019), this technique, which is known as a multilevel confirmatory factor analysis (MCFA), was developed by Muthen in 1994.In the MCFA procedure, observed variables are illustrated by squares and latent variables by circles or ovals. The bottom half of the diagram is the within level and is a customary confirmatory factor analysis, and the upper half is the between level which relies on group means for the

observed indicators. When put together, the full model connects the group means to the single latent factor (Dyer, Hanges, & Hall, 2005).

As in most research regarding schools, this data requires a between level analysis, so the next step was to conduct an MCFA on teacher student relations, disciplinary climate, and a stakeholder participation. The approximation of the latent variables was completed by analyzing the variance and covariance of each of the indicators, and then this set of relationships became the measurement model of the latent variable with those indicators (Romero Escobar, 2016). These relationships were based on the given theory and the previous research.

As multilevel latent constructs are developed, it is essential to conceptualize which type is most applicable for the study. There are two different constructs that occur at the secondary level, which is the school-level for this study (Stapleton, Yang, & Hancock, 2016). Stapleton et al. describes these two types are configural and shared (2016). This study utilized the configural constructs. In a configural construct, the measurement of the characteristics of the individuals forms a cluster and have identical factor loadings across levels.

For teacher student relations, survey participants responded to four questions: (a) whether or not they agreed that students and teachers got along, (b) teachers believed in the students' well-being, (c) teachers were interested in what students had to say, and (d) if they agreed that students received the assistance that they needed. Figure 5 displays the MCFA model diagram for teacher student relations. In Figure 5, the factor loadings of the four items were constrained to be equal across levels in order to produce the level 2 configural type of latent construct (Stapleton et al., 2016).

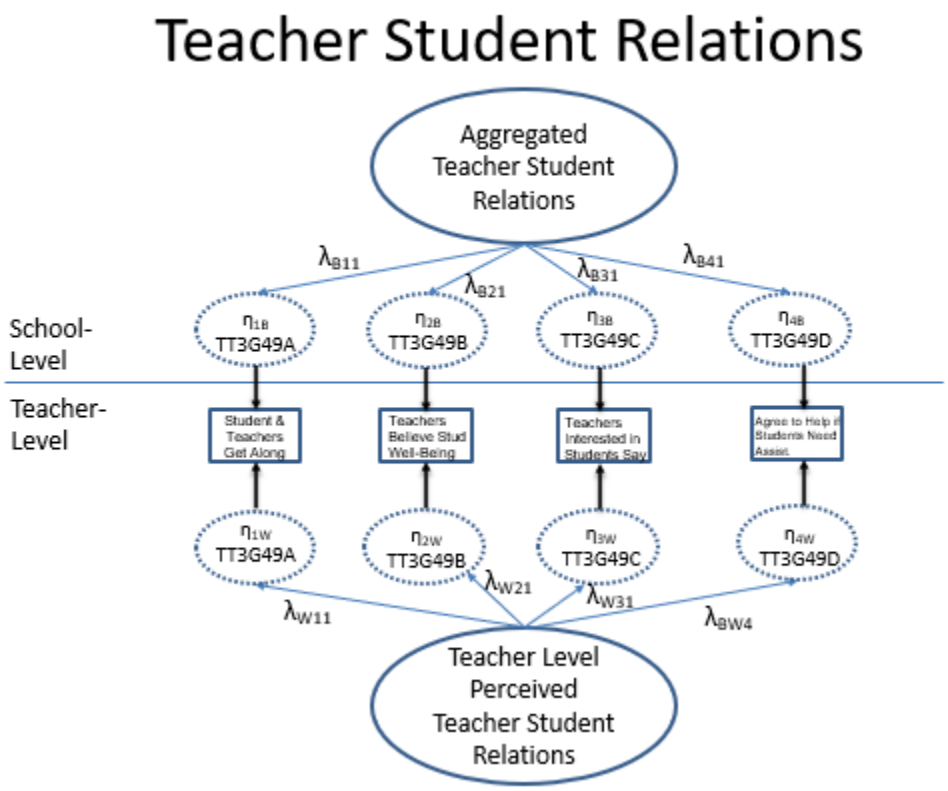


Figure 5. MCFA model diagram for teacher student relations.

The latent variable disciplinary climate was created from four questions: (a) teacher having to wait to start class due to the class being loud, (b) students interrupting the lesson, (c)students being noisy in class and disrupting the lesson, and finally, (d) students creating a pleasant environment. The last variable had to be reverse coded, so it was congruent with the other variables. Figure 6 illustrates the MCFA model diagram for disciplinary climate. In Figure 6, the factor loadings of the four items were constrained to be equal across levels in order to produce the level 2 configural type of latent construct (Stapleton et al., 2016).

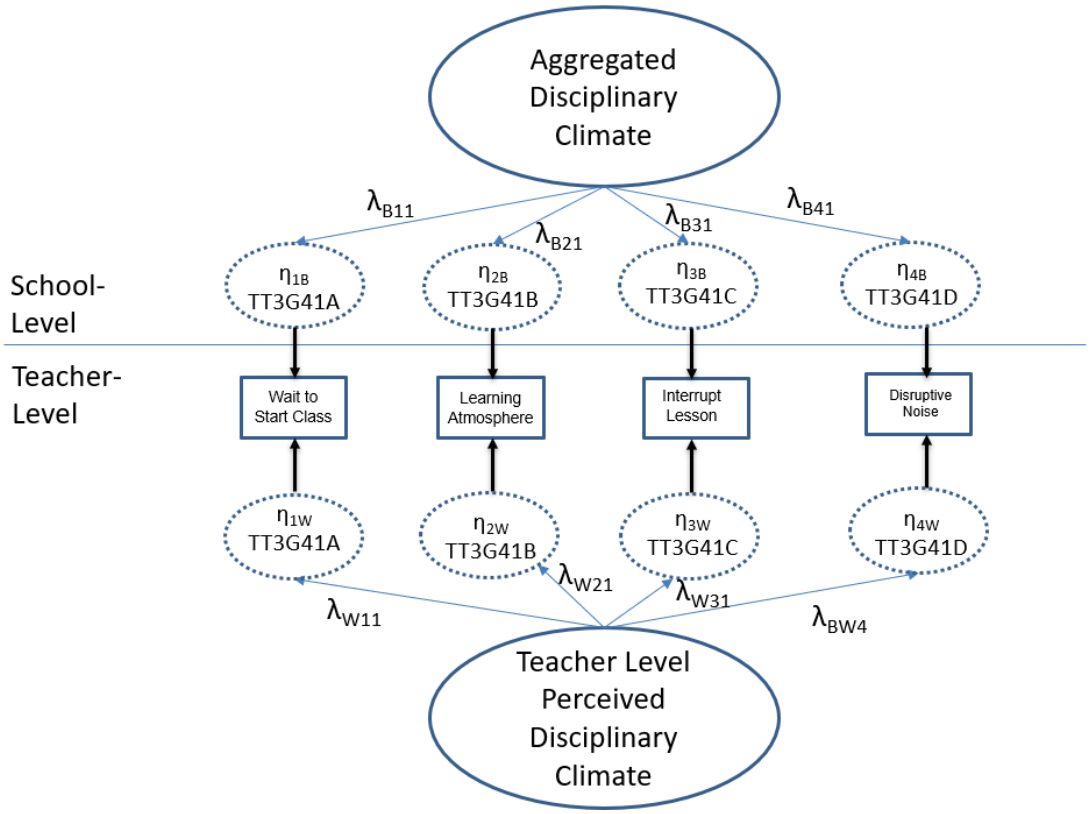


Figure 6. MCFA model diagram for disciplinary climate.

Finally, an MCFA was conducted for stakeholder participation. This was derived from a set of questions in regards to whether or not stakeholders had the opportunity to participate in decision-making activities at school. The stakeholders included staff and students. The questions also included responsibility and support. Figure 7 represents the MCFA model diagram for stakeholder participation. In Figure 7, the factor loadings of the four items were constrained to be equal across levels in order to produce the level 2 configural type of latent construct (Stapleton et al., 2016).

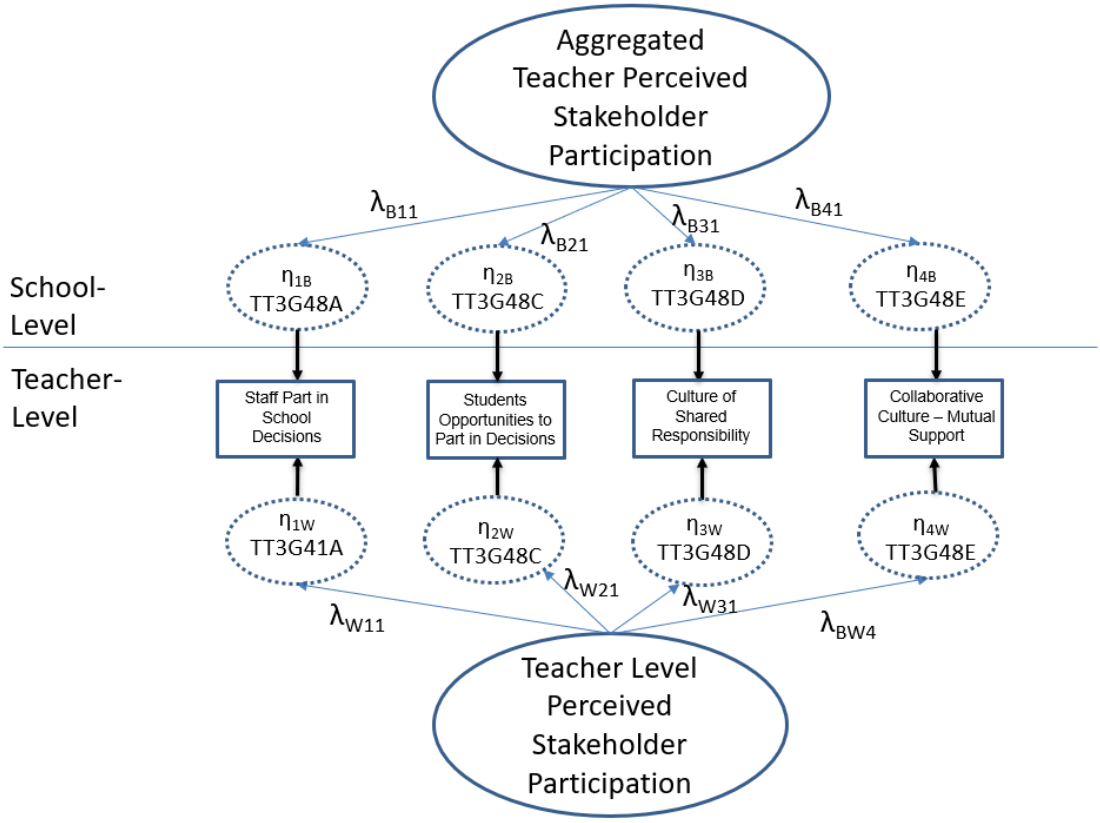


Figure 7. MCFA model diagram for stakeholder participation.

Structural analytical procedures. After the indices and scales were developed, the multilevel structural equation modeling (MSEM) method was applied to examine the structural relationships between indices and scales. MSEM takes into account that there is a hierarchical structure for the model and the data is clustered in some way, such as teachers in schools and schools in a district (Keith, 2019). Because these clusters are nested, there is a within-cluster dependence, which requires the researcher to utilize a multilevel approach instead of a single-level approach. The structured equation modeling allows the researcher to utilize regression information to utilize one variable to predict the value of another variable.

The first step was to determine the correlations between variables. Once the correlations were determined, various models were created to analyze the paths for significance. A path analysis allows the research to join several regression models together. To determine the strength of the model, the intra-class correlation (ICC) was calculated for each item to determine the extent of the variance that existed between the groups, and ICC2 was calculated to determine the extent of the variance that existed within the groups. Then, a two-level multilevel structural equation model (MSEM) was completed in order to evaluate both the within and between effects.

Figure 8 is a model diagram that demonstrates the correlation analysis.

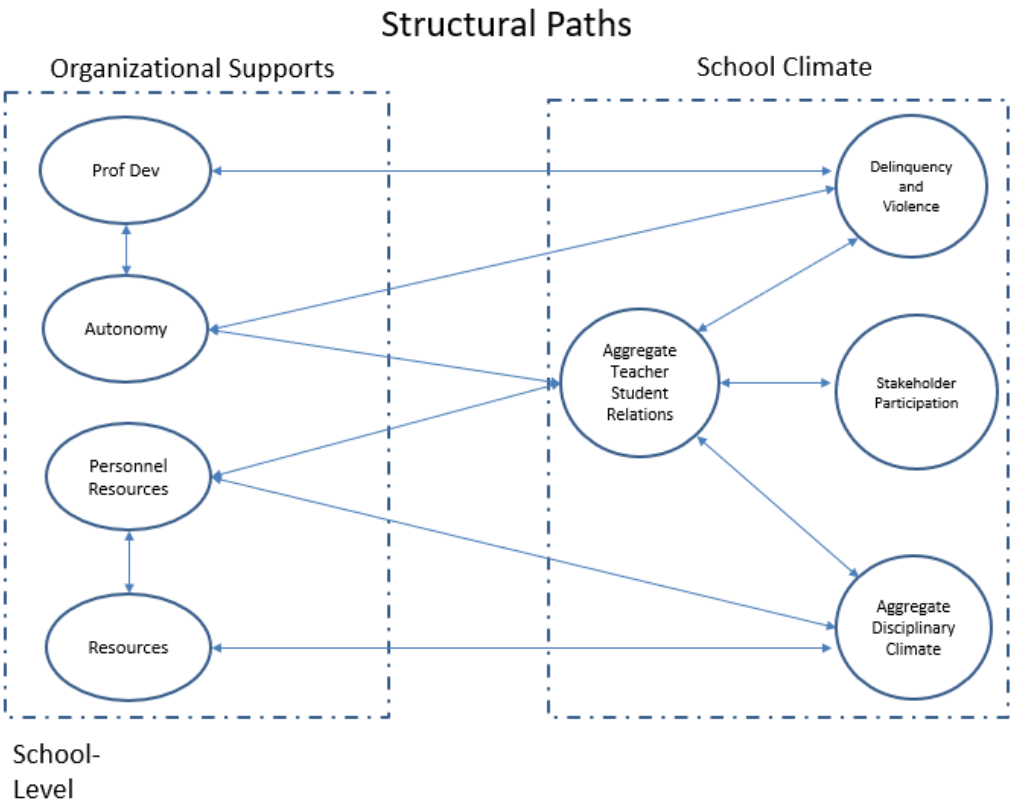


Figure 8. Model diagram of the correlation analysis.

The next step was to develop the MSEM models to analyze the influence of the organizational supports on school climate. This was completed in three steps. The first step was to review the influence of all of the organizational supports on each of the school climate variables based on the correlations revealed in the correlation analysis. The MSEM model is depicted in Figure 9.

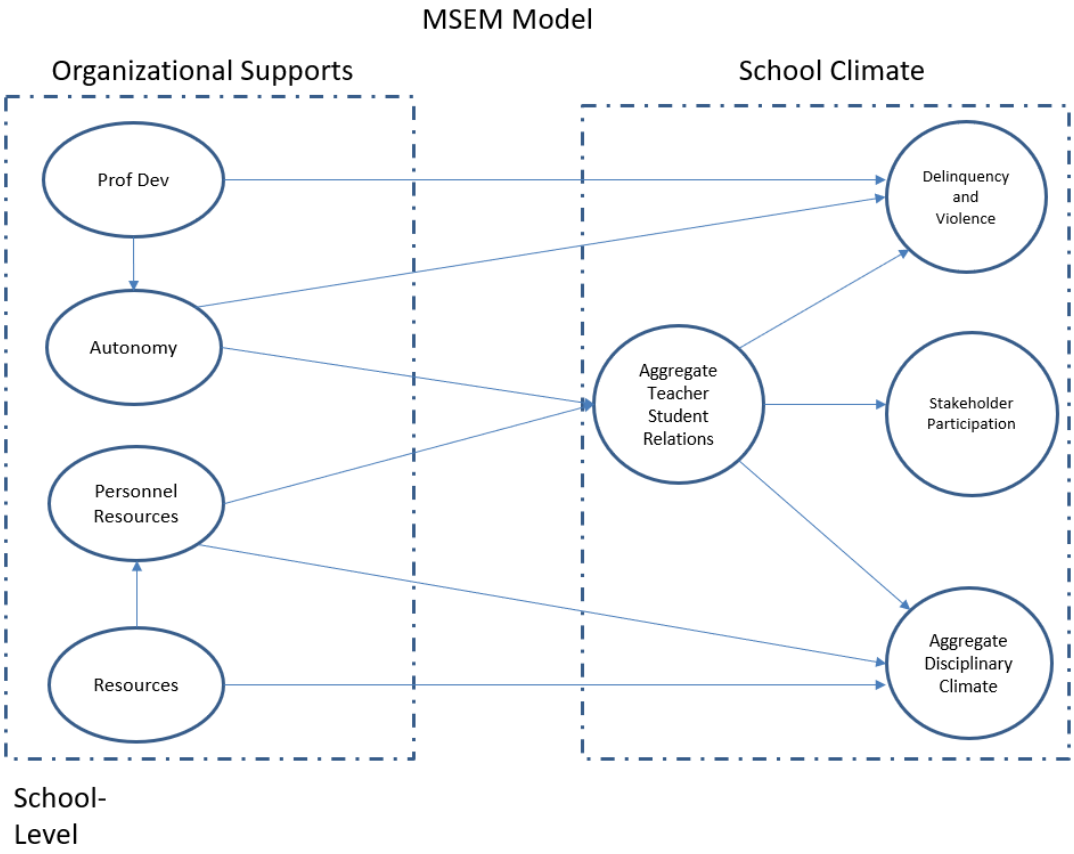


Figure 9. Model diagram of the MSEM model.

The second step was to remove the nonsignificant paths if there are any.

Model evaluation. Finally, several model fit indices were used to evaluate the fit of the models and the data, and they were then applied to compare those models to one

another. According to Heck and Thomas (2015), the "rule of thumb" for the model fit indices should be as follows: a comparative fit index (CFI) and Tucker-Lewis index (TLI) should both be greater than 0.95; the root mean square error approximation (RMSEA) should be less than 0.06; the standard root mean residual (SRMR) should be less than 0.08 (Heck & Thomas, 2015). To test which model was more parsimonious, Akaike information criterion (AIC) and Bayesian information criterion (BIC) were compared; the smaller values were considered to be a better fit (Keith, 2019).

Limitations

My analysis has several limitations. First, although school climate has been researched for over 100 years, there is no common definition for school climate (Cohen et al., 2009). In addition, school climate embodies all facets of the school including social, physical, academic, and emotional aspects (Okorji et al., 2016), therefore, it is difficult to ensure coverage of all of these characteristics in the analysis of the factors. However, by utilizing the constructs created by the OECD, I tried to minimize this limitation.

Next, although the TALIS surveyed teachers and principals from 48 countries, only those from the United States were utilized in this study. Therefore, these results may not be consistent across the other countries as there was no comparison across the other countries.

Summary

Since school climate affects every aspect of a school and because principals are the key to improving school climate, it is important to understand the supports district leadership can provide to building principals in the improvement efforts. This study

addressed these questions. It also investigated the effects of the provision of supports by the district administrators on school climate.

A structural equation modeling analysis and several multilevel confirmatory factor analyses were conducted using the Mplus software and TALIS 2018 public use data from the United States were utilized to answer the following questions: (a) to what extent does principal professional development have an impact on school climate, (b) to what extent does the school autonomy have an impact on school climate, and (c) to what extent does the provision of resources have an impact on school climate?

Chapter 4

Results

Introduction to Findings

The purpose of this study was to examine the influence of the supports that principals are given by district leadership on school climate. Chapter 4 will present the findings of the three research questions that guided this study. Organizational supports was conceptualized as a school-level construct and was derived as a latent independent variable through multilevel confirmatory factor analysis (MCFA) based on principal autonomy, professional development, and resources. Finally, school climate was conceptualized as also existing at both the teacher and school levels and was derived as a latent dependent variable through MCFA based on both the teacher and principal perceptions about the climate of the school such as relationships, violence, and involvement.

To complete the analysis, the United States teacher and principal data were merged using the key field IDSCHOOL identification. SPSS v. 26 was utilized to recode the data and to eliminate all of the variables other than the ones utilized in this study. Once this was completed, the data was exported into N2Mplus and then into MPlus v 8.4. A model was established for each research question to ultimately determine what district-level supports can be provided to principals to positively impact their school climate.

Descriptive Statistics

Participants. The Organisation for Economic Co-operation and Development (OECD) Teaching and Learning International Survey (TALIS 2018) collects data from a variety of countries to review the environments, working conditions, and workforce using

a consistent framework (OECD, 2019). Although principals and teachers from 48 countries were surveyed, only those from the United States were used in this study, which consisted of 2,560 teachers and 166 principals. Preceding the analysis, the school level data, which is the principal surveys, were merged into the teacher-level data utilizing the key field IDSCHOOL.

In the principal sample, there were nearly twice as many males as females and 67% had less than 10 years of experience as a principal. The exact opposite was true of the teacher sample, where there were nearly twice as many females as males. Two-thirds of the principals have had less than 10 years of experience as a principal and 64% had more than 10 years of experience. One-fourth of the schools were smaller than 500 students and nearly half were over 750. Table 5 presents the number of participants by gender, the years of experience, socioeconomic status of the schools, school enrollment, and the student to teacher ratio as well as the percentage of the sample for each. The relevant descriptive statistics for both the schools and the teachers within those schools are noted in Table 5.

Descriptive statistics for variables. Table 6 presents the factors considered in the school-level latent constructs. This table presents the number, minimum, maximum, mean and standard deviation of the focused variables: delinquency and violence (i.e., how often behaviors occur between students or between staff and students), professional development (i.e., principals' participation in professional development), resources-resources (i.e., the lack of resources), resources-personnel (i.e., the lack of pedagogical personnel), and autonomy over policies, staffing, budgeting, and curriculum (i.e., the

Table 5

Descriptive Information for the United States Sample

Demographic	*N*	Frequency	Description	Percent
Principal Gender	163	102	Male	63
		61	Female	37
Principal Experience	160	71	0-4	44
		37	5-9	23
		30	10-14	19
		13	15-19	8
		9	20 or more	6
School Socioeconomic Status	159	1	None	0.6
		23	1% - 10%	14.5
		35	11% - 30%	22.0
		52	31% - 60%	32.7
		48	> 60%	30.2
School Enrollment	160	12	Under 250	7.5
		30	250 - 499	18.8
		42	500 – 749	26.3
		25	750 – 999	15.6
		51	> 1000	31.9
Student/Teacher Ratio	160	69	1 – 14.99	43
		62	15.00 – 19.99	39
		29	> 20.00	18
Teacher Gender	2554	837	Male	33
		1717	Female	67
Teacher Experience	2523	460	0-4	18.2
		447	5-9	17.7
		511	10-14	20.3
		415	15-19	16.4
		690	20 or more	27.3

Note: *N* denotes only valid data; missing responses are not included.

Table 6

Descriptive Statistics for the Candidate Factors of the Latent Constructs (School Level)

Construct	Indicator	N	Min-Max	M	SD
Delinquency & Violence	TC3G30A	157	1-4	2.12	0.673
	TC3G30B	157	1-5	2.87	0.897
	TC3G30C	157	1-4	1.87	0.628
	TC3G30D	157	1-5	1.82	0.807
	Valid N (listwise)	157			
Organizational Supports					
Prof Dev	TC3G09B	159	1-4	1.97	0.803
	TC3G09C	157	1-4	1.65	0.715
	TC3G09D	159	1-4	2.45	0.912
	TC3G09G	158	1-4	2.09	0.828
	Valid N (listwise)	157			
Resource-Resources	T3PLACRE	157	1-2	1.39	0.490
Resource-Personnel	T3PLACPE	157	1-3	1.35	0.598
	Valid N (listwise)	157			
Autonomy-Ed Pol	T3PAUTP	151	1-3	2.36	0.715
Autonomy-Staffing	T3PAUTS	157	1-3	2.65	0.517
Autonomy-Budget	T3PAUTB	152	1-3	1.85	0.904
Autonomy-Curriculum	T3PAUTC	156	1-3	2.21	0.612
	Valid N (listwise)	146			

extent of school autonomy that the principals have over various areas of the decision making process).

For this study, school climate was determined through stakeholder participation, teacher student relations, delinquency and violence, and disciplinary climate. For each of these areas the survey utilized response options from one through four. A one indicated the teacher strongly disagreed and a four indicated the teacher strongly agreed. In these situations, the teachers agreed that staff and parents have opportunities to participate in

school decisions. They neither agreed nor disagreed that students had that same opportunity. The teachers strongly agree that teachers believe that the students' wellbeing is important; while they agree that teachers and students get along well with each other and teachers are interested in what students have to say. Finally, for the disciplinary climate, the teachers disagreed that the climate was negative. They felt they did not need to wait a long time to quiet the class down; they did not lose a lot of class time due to disruptions or disruptive noise; and they agreed that students take care to have a pleasant learning environment.

Table 7 presents the factors considered in the teacher-level latent constructs. This table presents the number, minimum, maximum, mean and standard deviation of the focused variables: stakeholder participation (i.e., how teachers perceive the participation among the stakeholders), teacher student relations (i.e., how well the students and teachers get along and support each other), and disciplinary climate (i.e., how well the teachers are able to maintain order in the classroom).

In determining whether to utilize a confirmatory factor analysis or a multilevel confirmatory factor analysis, it is important to determine whether the assumptions that create the data set are independent. In the TALIS data, the data is nested, meaning that the principals and teachers are nested into schools and the students are nested into classrooms and schools.

Results of single-level measurement models

School autonomy. A school-level confirmatory factor analysis (CFA) model was conducted to measure the latent variable school autonomy. The model fit indices were

Table 7

Descriptive Statistics for the Candidate Factors of the Latent Constructs (Teacher Level)

Construct	Indicator	N	Min-Max	M	SD
School Climate					
Stakeholder Participation	TT3G48A	2393	1-4	2.85	0.736
	TT3G48B	2394	1-4	2.85	0.684
	TT3G48C	2391	1-4	2.66	0.718
	TT3G48D	2393	1-4	2.78	0.713
	TT3G48E	2393	1-4	2.87	0.731
	Valid N (listwise)	2382			
Teacher Student Relations	TT3G49A	2395	1-4	3.22	0.552
	TT3G49B	2394	1-4	3.52	0.556
	TT3G49C	2394	1-4	3.25	0.590
	TT3G49D	2391	1-4	3.36	0.597
Disciplinary Climate	TT3G41A	1981	1-4	2.01	0.812
	TT3G41B*	1976	1-4	2.81	0.758
	TT3G41C	1981	1-4	2.08	0.839
	TT3G41D	1980	1-4	2.01	0.831
	Valid N (listwise)	1955			

*Item was reverse coded

presented in Table 8, the factor loadings in Table 12, and r-square values of indicators were presented in Table 13.

The first table is the model fit indices (Table 8). This fit indicates that the fit has mixed results. The RMSEA is not a good fit nor is the TLI; however, the CFI is an adequate fit.

According to these factors as shown in Table 9, the variations of autonomy of curriculum, staffing, budgeting, and policies can be attributed to the latent overall school autonomy. The factor analysis is a tool that can be utilized to explore the relationship for

Table 8

Model Fit for Autonomy and Professional Development and Delinquency and Violence

	Autonomy	Professional Development and Delinquency and Violence
AIC	1109.174	1631.489
BIC	1145.848	1680.692
Chi-Square	5.938	3.273
RMSEA	0.112	0.000
CFI	0.938	1.000
TLI	0.814	1.000
SRMR	0.040	0.038

Table 9

Factor Loadings for School Autonomy

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SCHAU BY				
T3PAUTC	0.668	0.110	6.060	0.000
T3PAUTS	0.596	0.115	5.206	0.000
T3PAUTB	0.586	0.101	5.797	0.000
T3PAUTP	0.889	0.049	18.184	0.000

complex concepts. Factor loadings of .60 or higher are considered to be strong. In addition, in each of these cases, the p-value is smaller than 0.05, so they are statistically significant. A model diagram with the standardized factor loadings for the CFA of school autonomy is noted in Figure 10.

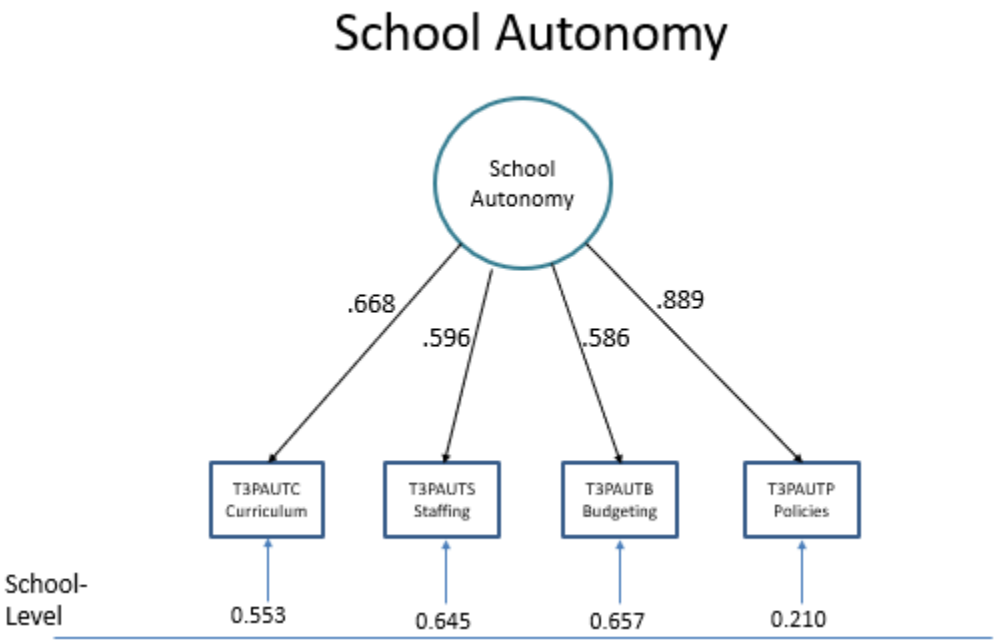


Figure 10. Standardized factor loadings for school autonomy.

The R-squared is a measure of how well the data is fitted to the regression line. The higher the R-squared the better the fit. Therefore, each of the variables for school autonomy are a good fit. In each of these, the R-squared is greater than 0.3, and they all have a p-value of less than 0.05. Therefore, they are not only strong but also statistically significant. The results of the R-squared for school autonomy is demonstrated in Table 10.

Professional development and delinquency and violence. A school-level CFA model was conducted to measure the latent variable professional development from three measured variables. This is a just-identified model (or a saturated model). Another school-level CFA model was conducted to measure the latent variable delinquency from

Table 10

R-Squared for School Autonomy

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
T3PAUTC	0.447	0.147	3.030	0.002
T3PAUTS	0.355	0.137	2.603	0.009
T3PAUTB	0.343	0.118	2.899	0.004
T3PAUTP	0.790	0.087	9.092	0.000

two measured variables. This is an under-identified model. Alone, these two models would not be possible to evaluate. So, I combined these two together to have a two-factor CFA model. The model fit indices were presented in Table 8, the standardized factor loadings were presented in Table 11 and the r-squared values of indicators were presented in Table 12 for professional development and delinquency and violence.

Table 11

Standardized Factor Loadings for Professional Development and Delinquency and Violence

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
PD BY				
PD09C	0.796	0.0084	9.490	0.000
PD09D	0.737	0.065	11.303	0.000
PD09G	0.452	0.179	2.524	0.012
DV BY				
TC3G30A	0.843	0.083	10.159	0.000
TC3G30C	0.844	0.082	10.253	0.000

Table 12

R-Squared for Professional Development and Delinquency and Violence

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
PD09C	0.633	0.133	4.745	0.000
PD09D	0.544	0.096	5.652	0.000
PD09G	0.204	0.162	1.262	0.207
TC3G30A	0.711	0.140	5.079	0.000
TC3G30C	0.712	0.139	5.126	0.000

According to these factors as shown in Table 11, the effects the increase of the administrative support for professional development, the reduction of conflicts in the schedule, and the provision of incentives are significant because each have factor loadings of .40 or higher which are considered to be strong. In addition, in each of these cases, the p-value is less than 0.05, so they are statistically significant. A model diagram with the factor loadings for the CFA of professional development and delinquency and violence is noted in Figure 11.

The R-squared is a measure of how well the data is fitted to the regression line. The higher the R-squared the better the fit. As shown in Table 12, administrative support for the professional development, the adjustment of schedules to remove conflicts, and the increase of incentives are a strong fit. In addition, the support and schedule adjustment both have a p-value of less than 0.05, which indicates they are significant. In regards to delinquency and violence, the R-squared are very good fits with nearly 71% of variance explained by each variable and a p-value of less than 0.05. According to the survey, principals indicated that vandalism, theft, physical injuries by students, and

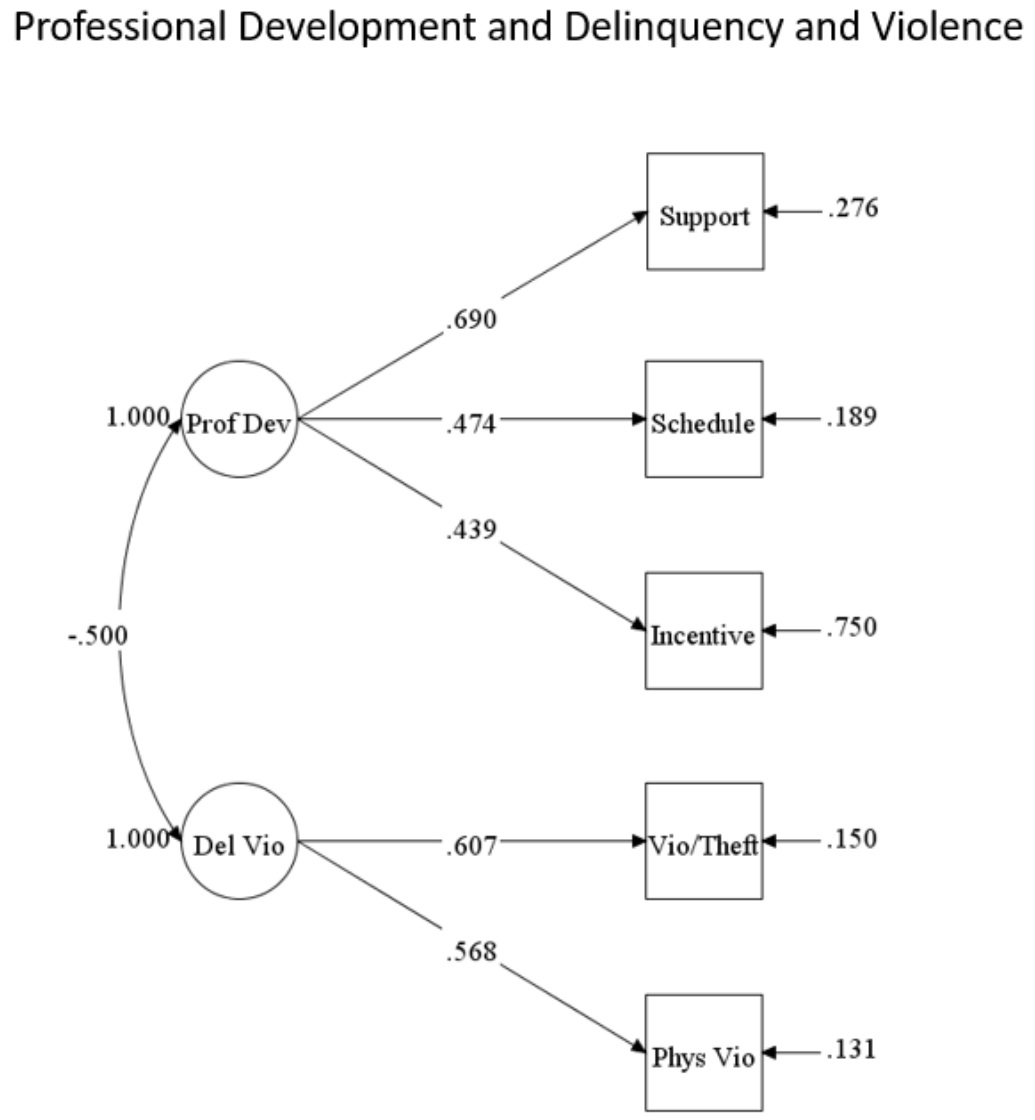


Figure 11. Standardized factor loadings and correlation for professional development and delinquency and violence.

intimidation of staff by students all occurred less than monthly. However, the survey indicated the principals perceived that students bullying each other occurred monthly.

Results of Multilevel Measurement Models

Stakeholder Participation. A MCFA model was conducted to develop the multilevel latent variable of stakeholder participation. The results were presented in Tables 14, 15, and 16.

Because this study is considering information from both the teacher and the school level, the analysis requires the use of multilevel modeling. However, prior to utilizing the multilevel modeling process, it is important to understand the within-group and between-group variations. To achieve this, intraclass correlations coefficients (ICCs) were utilized to approximate the amount of between-group variations. Because the ICCs were above .05, there variance at the school level justified the multilevel approach (Stapleton et al., 2016). This is an important step because without this level of variance, there would be no need to conduct a multilevel model. As shown in Table 13, the ICCs for each element at the teacher and the school level had a value above .05.

The next validation utilized was the calculation of the ICC2 for each of the factors. The ICC2s indicates the within-cluster agreement. In order for the latent constructs to be shared across clusters, they need to have a low variance within each cluster. This is indicated by an ICC2 that is greater than 0.70 for a strong reliability; however, values between 0.50 and 0.70 indicate marginal reliability, (Stapleton et al., 2016). All of the indicators for stakeholder participation and disciplinary climate considered in this study met this requirement as evident in Table 13. A construct that is

Table 13

Partitioned Variances, Average Cluster Sizes, and Intraclass Correlations

Construct	Indicator	Level 1 Variance	Level 2 Variance	Average Cluster Size	ICC1	ICC2
Stakeholder Participation						
Staff Participation in School Decisions	TT3G48A	0.435	0.065	14.533	0.129	0.685
Students Participate in School Decisions	TT3G48C	0.474	0.047	14.533	0.091	0.590
Culture of Shared Responsibility	TT3G48D	0.406	0.052	14.533	0.116	0.651
Collaborative School Culture	TT3G48E	0.417	0.057	14.533	0.121	0.665
Teacher Student Relations						
Teachers Get Along Well	TT3G49A	0.272	0.016	14.515	0.154	0.154
Teachers Believe Students Well-Being Is Important	TT3G49B	0.306	0.004	14.515	0.034	0.159
Teachers are Interested in What Students Say	TT3G49C	0.341	0.007	14.515	0.061	0.230
Teachers Provide Students with Assistance	TT3G49D	0.334	0.008	14.515	0.062	0.258
Disciplinary Climate						
When Lessons Begin, Teachers Have to Wait for Students to Quiet Down	TT3G41A	0.610	0.071	12.012	0.094	0.583
**Students Create a Pleasant Learning Atmosphere	TT3G41B	0.526	0.081	12.012	0.137	0.649
Teachers Lose Time Because of Students' Interruptions	TT3G41C	0.617	0.107	12.012	0.152	0.676
Classroom is Disruptive	TT3G41D	0.609	0.099	12.012	0.143	0.661

considered to be configural has little to no variability in the mean but may still be of interest (Stapleton et al., 2016). The substantive ICC values justified the development of this latent multilevel measure of stakeholder participation.

The model fit indices for stakeholder participation can be found in Table 14. These indices indicate that this model is a very strong model. The CFI and TLI are both above 0.95; the RMSEA is 0.031 which is smaller than 0.05; and the SRMR for between and within is below 0.06.

Table 14

Model Fit for Stakeholder Participation, Teacher Student Relations, and Disciplinary Climate

	Stakeholder Participation	Teacher Student Relations	Disciplinary Climate
AIC	15257.475	12918.069	14198.282
BIC	15349.993	13010.567	14287.752
Chi-Square	26.320	31.333	25.069
RMSEA	0.031	0.035	0.033
CFI	0.987	0.977	0.994
TLI	0.980	0.966	0.991
SRMRw	0.028	0.017	0.018
SRMRb	0.046	0.271	0.107

Table 15 displays the factor loadings for the stakeholder participation. At the school level, according to the factor loadings, each are significant. The factor loadings were all above .50 and the p-values were less than 0.05.

Table 15

Factor Loadings for Stakeholder Participation for the Within and Between Levels

	Unstandardized Results		Standardized Results	
	Estimate	Two-Tailed P-Value	Estimate	Two-Tailed P-Value
Within Level:				
PARTW BY				
TT3G48A	1.000	999.000	0.736	0.000
TT3G48C	0.916	0.000	0.651	0.000
TT3G48D	1.142	0.000	0.881	0.000
TT3G48E	1.087	0.000	0.820	0.000
Between Level:				
PARTB BY				
TT3G48A	1.000	999.000	0.874	0.000
TT3G48C	0.916	0.000	0.873	0.000
TT3G48D	1.142	0.000	0.999	0.000
TT3G48E	1.087	0.000	0.980	0.000

The R-squared is a measure of how well the data is fitted to the regression line. The higher the R-squared the better the fit. Therefore, each of the variables for stakeholder participation are a good fit. The fact that each variable has a p-value of less than 0.05 also signifies the significance. They indicated that 76% of the variance of stakeholder participation can be explained by the independent variable that suggests that the school provides staff with the opportunity to actively participate in school decisions. The two largest variances can be attributed to a culture of shared responsibility (99.8%) and a collaborative school culture (96%).

The results are also significant at the teacher level. Again, the two largest variances are attributed to a collaborative school culture (54.2%). The lowest variance,

although it is still high, was attributed to the opportunity for students to actively participate in school decisions.

Table 16

R-Squared for Stakeholder Participation

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Within Level				
PARTW				
TT3G48A	0.542	0.034	15.808	0.000
TT3G48C	0.424	0.045	9.316	0.000
TT3G48D	0.776	0.021	37.227	0.000
TT3G48E	0.672	0.030	22.033	0.000
Between Level				
PARTB				
TT3G48A	0.764	0.088	8.660	0.000
TT3G48C	0.761	0.073	10.396	0.000
TT3G48D	0.998	0.000	2420.929	0.000
TT3G48E	0.961	0.036	26.774	0.000

A model diagram is presented in Figure 12. These results indicate that a latent measure is validated.

Teacher student relations. A multilevel confirmatory factor analysis (MCFA) model was conducted to develop the multilevel latent variable of teacher student relations. The results were presented in Tables 14, 17, and 18.

Again, in order to determine if a multilevel analysis is essential, the ICCs and ICC2s need to be analyzed. As shown in Table 13, the ICCs for each element at the teacher and the school level had a value above .05. All of the ICC2s are above 0.70, so

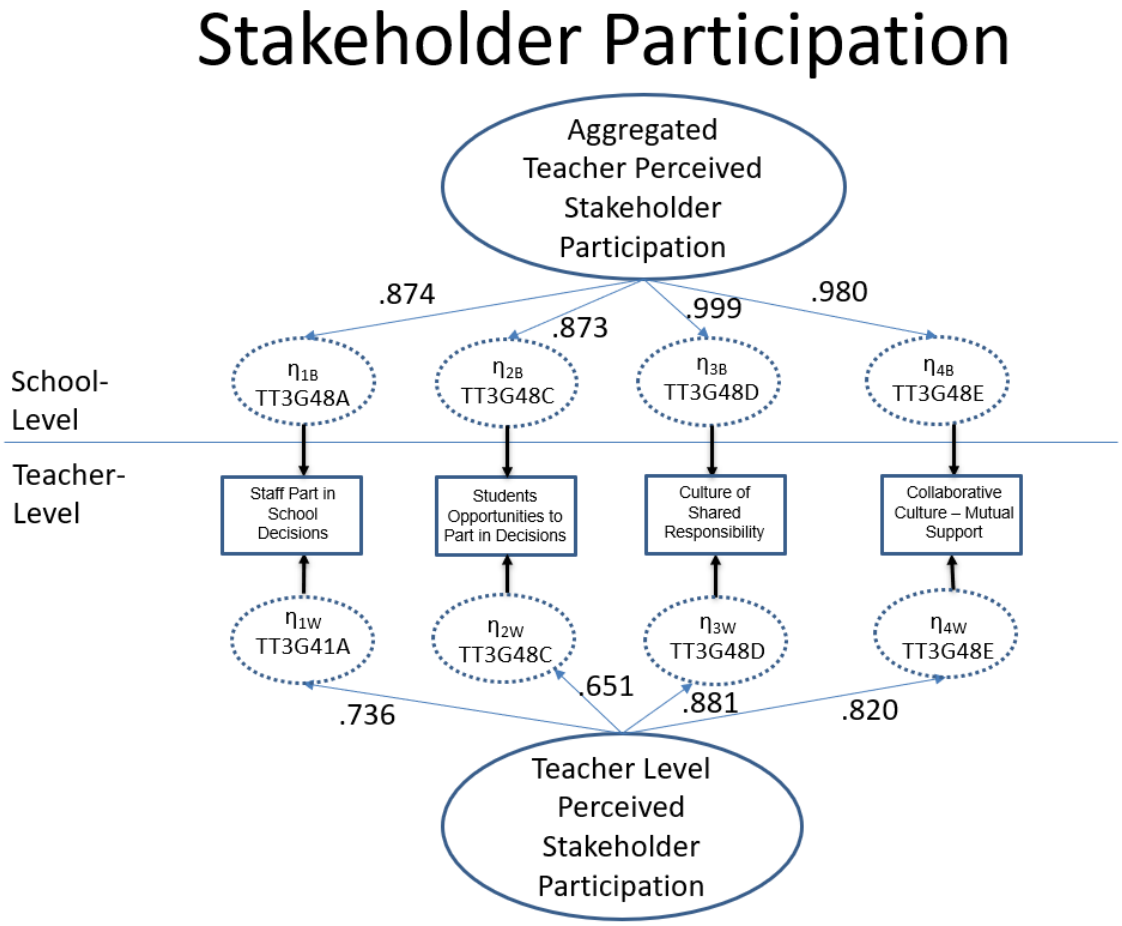


Figure 12. MCFA model diagram of teacher perceived stakeholder participation with standardized factor loadings.

this met the requirement as well as indicated in Table 13. The substantive ICC values justified the development of this latent multilevel measure of teacher student relations.

The model fit indices for teacher student relations can be found in Table 14. These indices indicate that this model is a very good model. The CFI and TLI are both above 0.95; the RMSEA is 0.035 which is less than 0.05; and the SRMR for within is less than 0.06 at 0.017.

Table 17 presents the variables considered in the constructs of teacher student relations and shows both the unstandardized and standardized factor loadings. At the school level, according to the factor loadings, each are significant. At the teacher level, the standardized factor loadings were all above 0.641 and at the school level, they were above 0.572.

Table 17

Factor Loadings for Teacher Student Relations for the Within and Between Levels

	Unstandardized Results		Standardized Results	
	Estimate	Two-Tailed P-Value	Estimate	Two-Tailed P-Value
Within Level				
TSRW				
TT3G49A	1.000	999.000	0.641	0.000
TT3G49B	1.287	0.000	0.797	0.000
TT3G49C	1.413	0.000	0.817	0.000
TT3G49D	1.216	0.000	0.715	0.000
Between Level				
TSRB				
TT3G49A	1.000	999.000	0.572	0.000
TT3G49B	1.287	0.000	0.956	0.000
TT3G49C	1.413	0.000	0.998	0.000
TT3G49D	1.126	0.000	0.772	0.000

For each of the variables included in the teacher student relations, the majority had an R-squared above 0.5, so they are all a good fit. The fact that each variable has a p-value of less than 0.05 also signifies the significance. All of the variances which explain the independent variable are above 33% at the school level. The largest variance can be attributed to teachers being interested in what students have to say (99.5%). In

addition, the variance attributed to teachers believing in the students' well-being was also very high (92%). The other two variances, students and teachers getting along and teachers agreeing that if students needed help they were provided that assistance were also quite significant with variances of 33% and 60% respectively.

The results are also significant at the teacher level. All of the variances which explain the independent variable are above 41% at the teacher level. The largest variance can be attributed to teachers being interested in what students have to say (67%). In addition, the variance attributed to teachers believing in the students' well-being was also very high (64%). The other two variances, students and teachers getting along and teachers agreeing that if students needed help they were provided that assistance were also quite significant with variances of 41% and 51% respectively.

Table 18

R-Squared for Teacher Student Relations for the Within and Between Levels

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Within Level:				
TSRW				
TT3G49A	0.411	0.042	9.770	0.000
TT3G49B	0.636	0.037	16.987	0.000
TT3G49C	0.668	0.033	20.363	0.000
TT3G49D	0.512	0.039	13.247	0.000
Between Level:				
TSRB				
TT3G49A	0.327	0.121	2.690	0.007
TT3G49B	0.915	0.079	11.563	0.000
TT3G49C	0.995	0.002	624.607	0.000
TT3G49D	0.597	0.090	6.652	0.000

A model diagram is presented in Figure 13. These results indicate that a latent measure is validated.

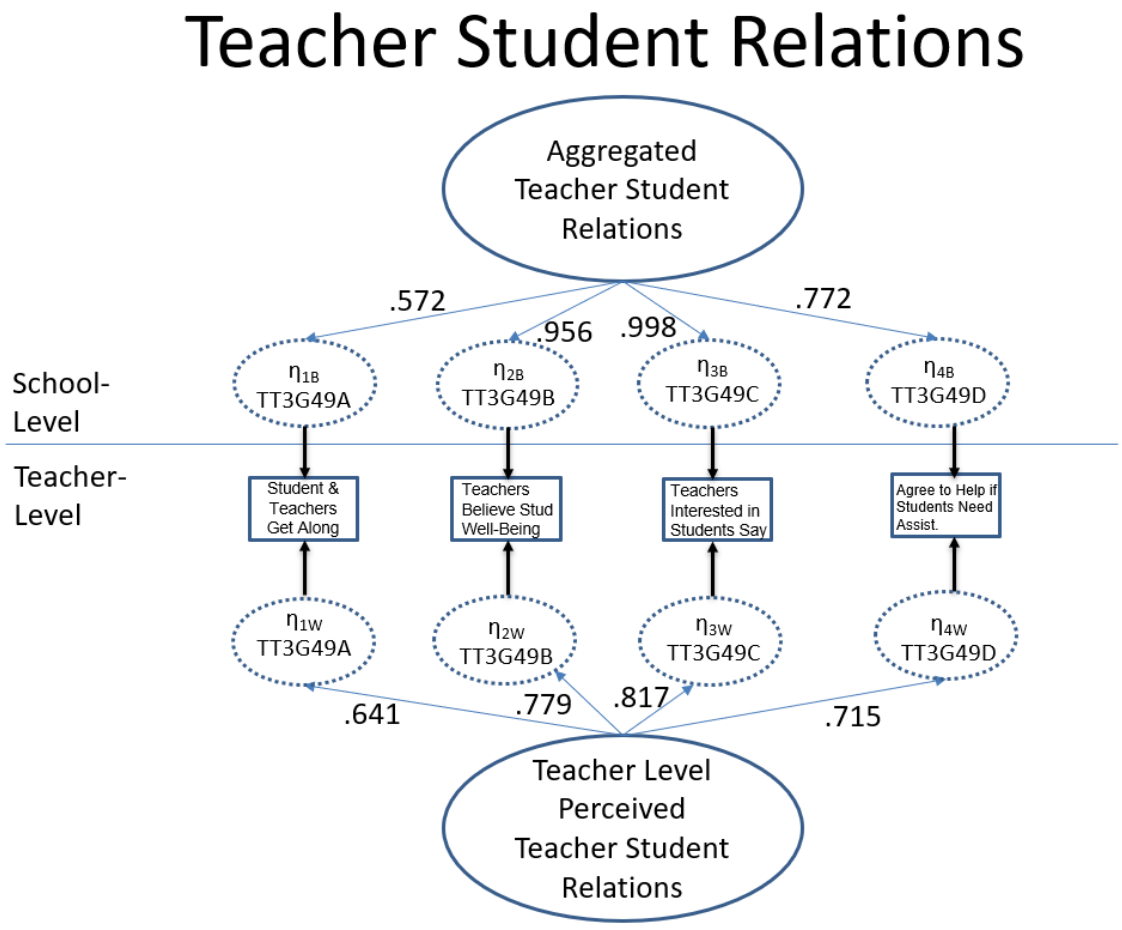


Figure 13. MCFA model diagram of teacher student relations with standardized factor loadings.

Disciplinary climate. A multilevel confirmatory factor analysis (MCFA) model was conducted to develop the multilevel latent variable of disciplinary climate. The results were presented in Tables 19 and 20.

Finally, in order to determine if a multilevel analysis is essential, the ICCs and ICC2s need to be analyzed. As shown in Table 13, the ICCs for each element at the teacher and the school level had a value above .05. All of the ICC2s are above 0.70, so this met the requirement as well as indicated in Table 13. The substantive ICC values justified the development of this latent multilevel measure of disciplinary climate.

The model fit indices for teacher student relations can be found in Table 14. These indices indicate that this model is a very good model. The CFI and TLI are both above 0.95; the RMSEA is 0.033 which is less than 0.05; and the SRMR for within is less than 0.06 at 0.018.

The factor loadings are significant at both the teacher and the school levels. In each of the variables, the factor loadings were greater than .60 which indicates a strong model. These loadings are reported in Table 19.

The R-squared is a measure of how well the data is fitted to the regression line. The higher the R-squared the better the fit. All of the R-squared calculations are above 0.5, therefore, each of the variables for disciplinary climate are a good fit. In addition, each variable has a p-value of less than 0.05 also signifies they are statistically significant. Table 20 provides the R-squared values for disciplinary climate.

At the school level, according to the R-squared, each are significant. All of the variances are nearly 80% or above at the school level. The largest variance can be attributed to lessons being interrupted (99.5%). The teacher losing class time because of the students were disrupting class had to be fixed to zero because it was too closely correlated to the teacher student relations. The other two variances, waiting to start class

Table 19

Factor Loadings for Disciplinary Climate for the Within and Between Levels

	Unstandardized Results		Standardized Results	
	Estimate	Two-Tailed P-Value	Estimate	Two-Tailed P-Value
Within Level:				
DCW				
TT3G41A	1.000	999.000	0.759	0.000
TT3G41B	0.781	0.000	0.623	0.000
TT3G41C	1.212	0.000	0.911	0.000
TT3G41D	1.176	0.000	0.891	0.000
Between Level:				
DCB				
TT3G41A	1.000	999.000	0.985	0.000
TT3G41B	0.781	0.000	0.895	0.000
TT3G41C	1.212	0.000	1.000*	0.000
TT3G41D	1.176	0.000	0.997	0.000

Note: Factor Loading for TT3G41D is fixed at 1.00.

Table 20

R-Squared for Disciplinary Climate for the Within and Between Levels

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Within Level:				
DCW				
TT3G41A	0.577	0.043	13.261	0.000
TT3G41B	0.388	0.040	9.807	0.000
TT3G41C	0.830	0.018	44.957	0.000
TT3G41D	0.793	0.019	40.806	0.000
Between Level:				
DCB				
TT3G41A	0.970	0.073	13.221	0.000
TT3G41B	0.801	0.090	8.906	0.000
TT3G41C	0.999*	0.000	3374.956	0.000
TT3G41D	0.995	0.029	34.050	0.000

Note: R-squared for TT3G41C is .999 because it was fixed to zero.

and the learning atmosphere were also quite significant with variances of 97% and 80% respectively.

The results are also significant at the teacher level. Again, the two largest variances can be attributed to lessons being interrupted (83%) and disruptive noises in class (79%). The other two variances, waiting to start class and the learning atmosphere were also quite significant with variances of 58% and 39% respectively. A representation of these R-squared can be found in Table 20.

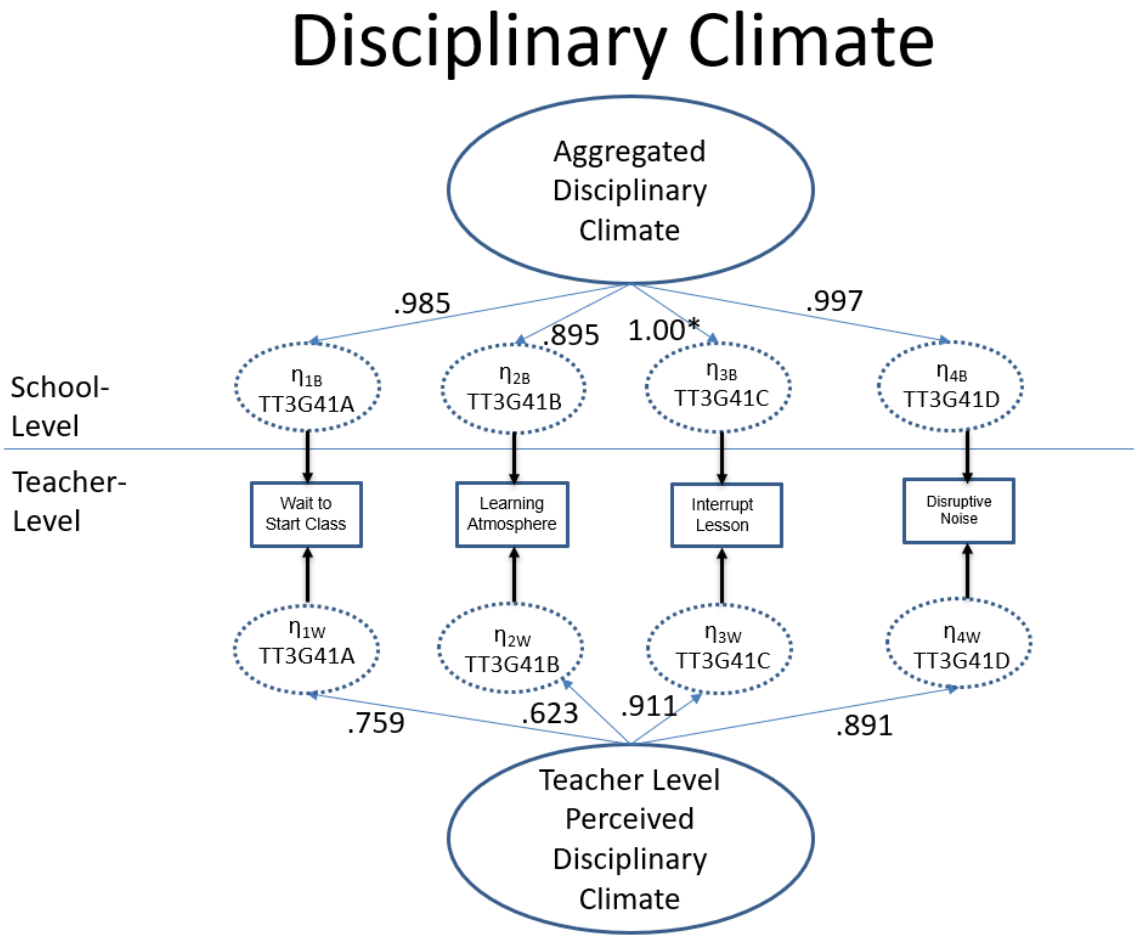
A model diagram is presented in Figure 14. These results indicate that a latent measure is validated.

MSEM Model Results

Once the variables were created, the next step was to conduct the MSEM stage of the analysis. First a correlation analysis had to be conducted to grasp the relationship between the variables. Next, three models were developed and analyzed to ascertain the best fit. Finally, the results were captured in Table 22.

Results of correlation analysis. A bivariate correlation of the variables was conducted to understand the relationship between variables. Variables were entered two at a time to determine which were significant. These results can be found in Figure 15. Any set of variables that are positively correlated indicates that the two variables move in the same direction, while any two variables that are negatively correlated indicates the two items move in opposite directions.

Next, three different models were evaluated to determine which fit best. The first model, which was the baseline model included all of the identified variables. This model



Note: Students interrupting lessons was fixed to 1.00.

Figure 14. MCFA model diagram of disciplinary climate with standardized factor loadings.

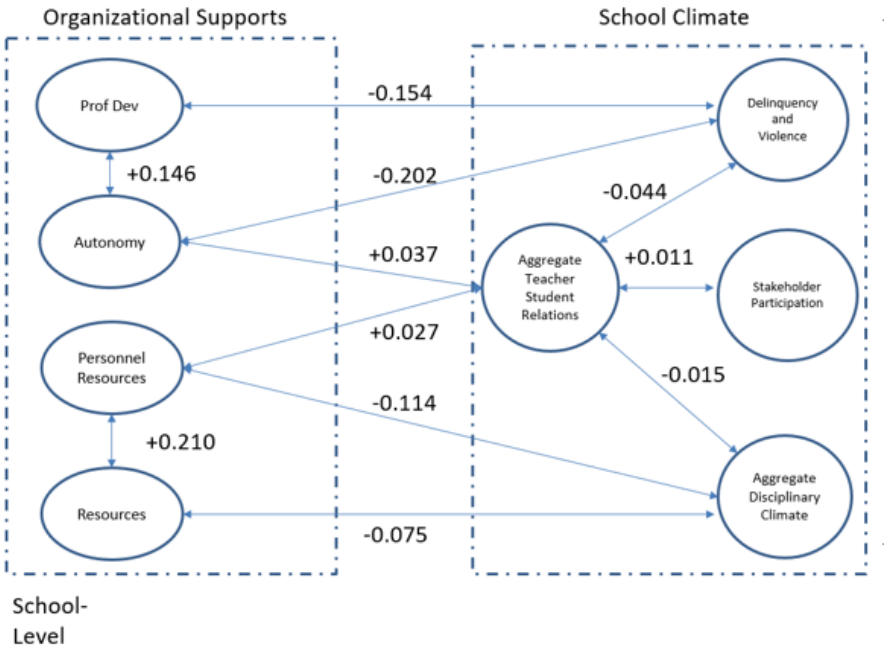


Figure 15. Bivariate correlation results

was then evaluated to determine which variables were significant. The results of Model 1 can be found in Figure 16. Several paths were not significant; therefore, paths were removed based on the literature review.

In the second model, because the results were not significant between school autonomy and domestic violence, this path was removed. In addition, the path between personnel resources and disciplinary climate was removed for the same reason. These results are depicted in Figure 17. As a result, one path remained insignificant, so it was removed as well, creating the final model.

Finally, the strongest model, which was Model 3, removed stakeholder participation. In each of the iterations of the models, stakeholder participation did not yield significant results. For that reason, the path from teacher student relations to

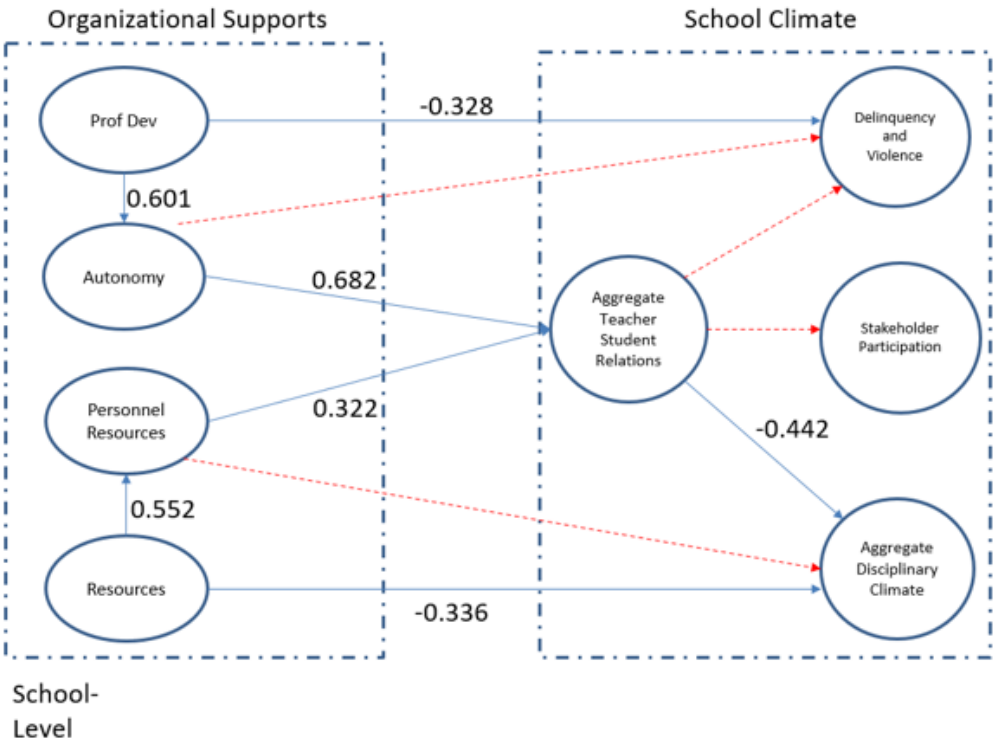


Figure 16. MSEM Model 1.

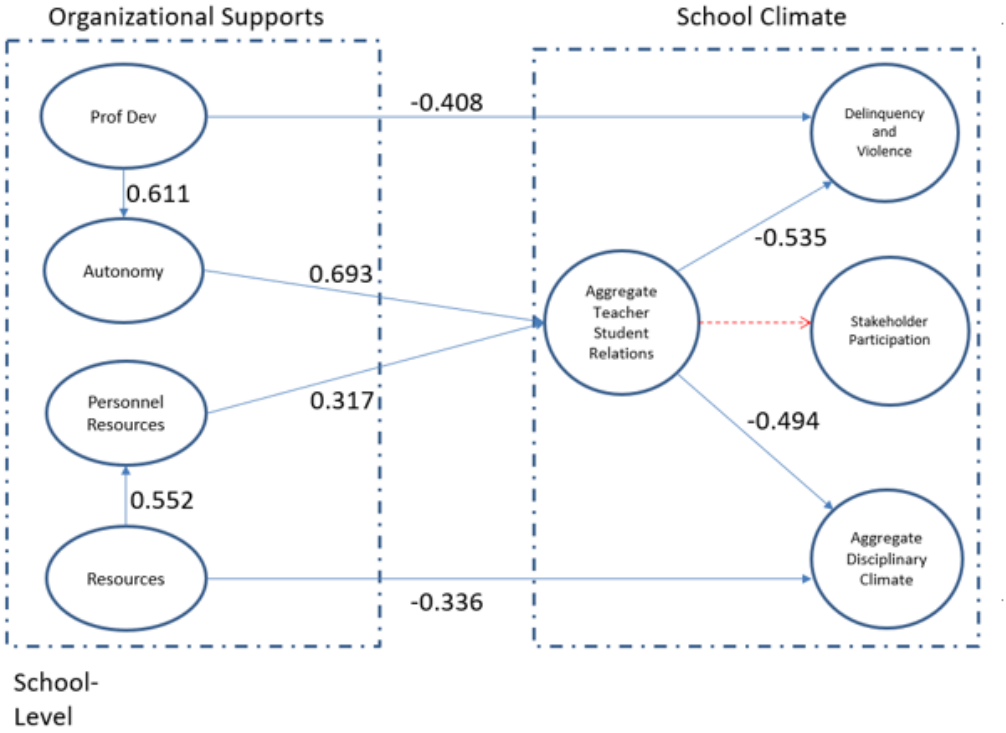


Figure 17. MSEM Model 2.

stakeholder participation was removed as was the variable for stakeholder participation. As a result, all of the paths were significant. These results can be found in Figure 18. The standardized estimates for each of the three models are presented in Table 21, with the model fit indices presented in Table 22.

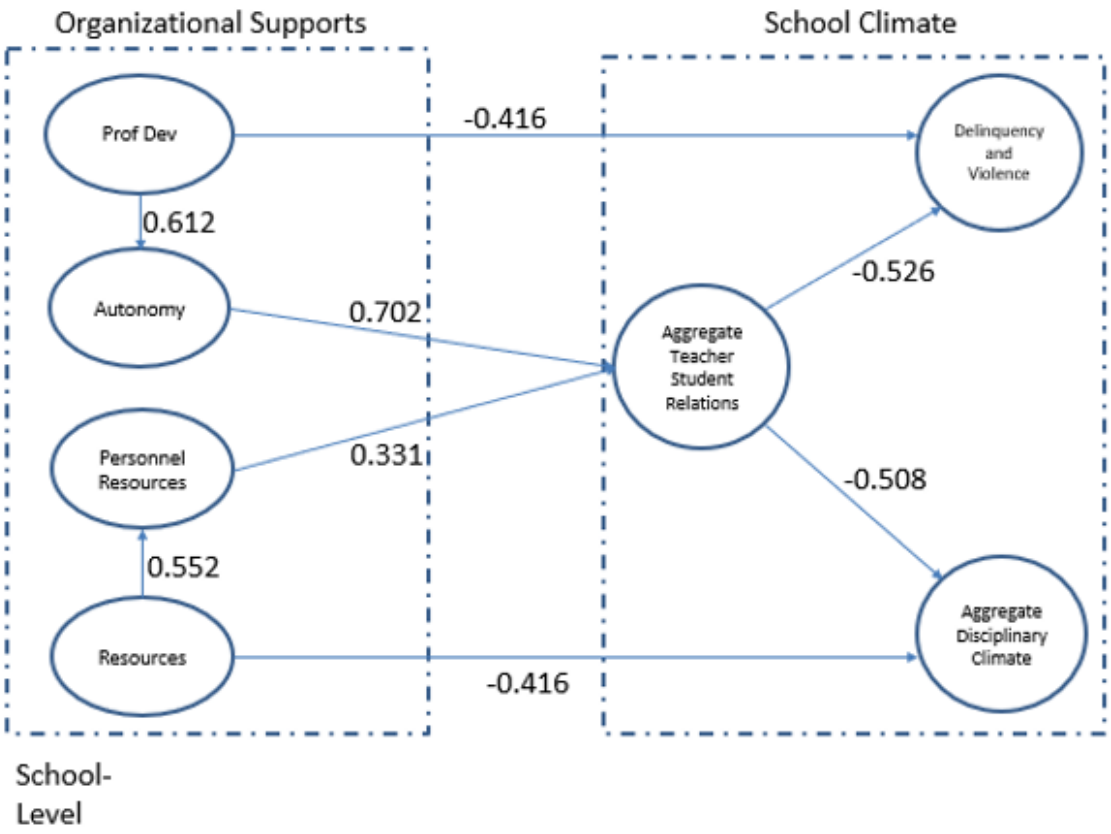


Figure 18. MSEM Model 3.

Table 21

Standardized Estimates of the MSEM Models

Dependent Variable	Independent Variable	Model 1 School-Level Effect (SE)	Model 2 School-Level Effect (SE)	Model 3 School-Level Effect (SE)
Stakeholder Participation	Teacher Student Relations	0.342 (0.219)	0.338 (0.218)	
Delinquency & Violence	Teacher Student Relations	-0.415 (0.110)	-0.535* (0.174)	-0.526* (0.172)
Delinquency & Violence	Teacher Student Relations			
	Professional Development	-0.328* (0.158)	-0.408* (0.197)	-0.416* (0.188)
	School Autonomy	-0.190 (0.226)		
Disciplinary Climate	Teacher Student Relations	-0.442* (0.009)	-0.494* (0.155)	-0.508* (0.154)
	Resources – Personnel	-0.184 (0.202)		
	Resources – Resources	-0.336* (0.001)	-0.432* (0.124)	-0.416* (0.127)
Teacher Student Relations	School Autonomy	0.682* (0.119)	0.693* (0.109)	0.702* (0.099)
	Resources – Personnel	0.322* (0.005)	0.317* (0.086)	0.331* (0.080)
Resources – Personnel	Resources - Resources	0.552* (0.000)	0.552* (0.113)	0.552* (0.113)
School Autonomy	Professional Development	0.601* (0.000)	0.611* (0.139)	0.612* (0.137)
R Squared	Teacher Student Relations	0.568* (0.182)	0.581* (0.158)	0.603* (0.140)
R Squared	Disciplinary Climate	0.516* (0.151)	0.505* (0.149)	0.509* (0.149)
R Squared	Stakeholder Participation	0.117 (0.150)	0.114 (0.147)	
R Squared	Delinquency & Violence	0.609* (0.111)	0.638* (0.117)	0.638* (0.118)
R Squared	School Autonomy	0.361* (0.161)	0.373* (0.169)	0.375* (0.168)

Table 22

Model Fit Indices for MSEM Models

	Model 1	Model 2	Model 3
AIC	43146.580	43148.669	28925.723
BIC	43691.448	43681.944	29337.272
Chi-Square Value	650.682	654.110	285.844
Degrees of Freedom	281	283	172
P-Value	0.0000	0.0000	0.0000
Scaling Correction Factor	1.8196	1.8194	1.8648
RMSEA	0.023	0.023	0.016
CFI	0.948	0.947	0.974
TLI	0.940	0.941	0.969
Chi-Square Value	7362.657	7362.657	4504.130
Degrees of Freedom	319	319	199
P-Value	0.0000	0.0000	0.0000
SRMR within	0.045	0.045	0.040
SRMR between	0.142	0.145	0.134
R-Squared for Dependent Variables Between			
Teacher Student Relations	0.568 (0.002)	0.581 (0.000)	0.603 (0.000)
Stakeholder Participation	0.117 (0.434)	0.114 (0.438)	******
Disciplinary Climate	0.516 (0.001)	0.505 (0.001)	0.509 (0.001)
Delinquency and Violence	0.609 (0.000)	0.638 (0.000)	0.638 (0.000)
School Autonomy	0.361 (0.025)	0.373 (0.028)	0.375 (0.026)

Results of research question 1: To what extent does principal professional development have an impact on school climate? One area this research considered as a resource to principals was the professional development for principals. The results of the regressions are significant between the reduction of barriers on professional development and delinquency and violence as well as school autonomy. The question then becomes are these results correlations or do they demonstrate an impact. The literature suggested that professional development impacts the ability to attract and retain high quality

personnel (Rowland, 2017), however, this was not the case in this study. The literature also indicated that strong leadership developed through professional learning opportunities supports a positive school climate (Castro Silva, Amante, & Morgado, 2017). In addition, the literature suggests principals need professional development to be more autonomous (Boudreaux, 2017).

According to this study, the barriers to professional development has a direct impact on delinquency and violence. As the barriers to professional development are removed and principals receive additional professional development, the delinquency and violence in the schools is reduced. In fact, the regression coefficient was 0.416 which is impressive. In addition, the reduction of barriers to professional development also had an impressive effect on school autonomy (0.612) indicating that when the barriers are removed, the principals perceive they have greater autonomy. According to Killion, increased professional development in leadership increases principal self-efficacy and an increase in instructional climate (Jacob, Goddard, Kim, Miller, & Goddard, 2015). In addition, Grissom and Harrington (2010), indicated that there was a significant positive relationship between principal professional development and the school and classroom conditions.

Results of Research Question 2: To what extent does the school autonomy have an impact on school climate? The second area of resources considered in this study was autonomy. According to the literature, principal autonomy should be commiserate with the principal's responsibilities because it provides an opportunity to flexibly meet the needs of the staff and students (Goodwin et al., 2005). This was reaffirmed in this study. Although school autonomy did not have a direct effect on

stakeholder participation at the school level, school autonomy did have a direct impact on school climate through teacher student relations at the school level with a regression coefficient of 0.702. And, the stronger the teacher student relations the lower the students' delinquency and violence (-0.526) and the fewer the number of discipline referrals (-0.508). These results match the literature. According to Steinberg and Cox (2017), principals who were granted more autonomy were able to implement organizational change which improved the discipline and safety in their buildings.

Results of Research Question 3: To what extent does the provision of resources have an impact on school climate? The final area of resources considered in this study was the provision of personnel and school resources. School resources, which included instructional materials, digital technology, internet access, library materials, instructional space, physical infrastructure, and materials for vocational skills, had an impressive effect on disciplinary climate (-0.416) and on the school's ability to provide qualified personnel (0.552). Furthermore, the ability of the school to provide qualified personnel had a significant impact on the teacher student relationships in the building with a regression coefficient of 0.331.

These results reaffirm the Wallace Foundation's information regarding resources. According to Plecki et al. (2009), the investment of resources is essential to improve the learning environment for students, and these resources need to be provided in a coherent, equitable, effective and sustainable method. Because of this, resource allocation cannot be undertaken in isolation (Plecki et al., 2009).

The lack of barriers to professional development of principals, however, has a significant effect on the principals' perception of their autonomy, and their autonomy has

a significant impact on the teacher-student relations (0.702) at the school level. Also, at the school level, teacher-student relations as an inverse relationship on the delinquency and violence (-0.526) that occurs in the school and on disciplinary climate (-0.508). In other words, the stronger the student teacher relations, the fewer discipline issues that exist. Finally, resources did not have an impact on stakeholder participation.

These results are noted in Figure 18.

Summary

The purpose of this study was to examine the influence of the supports that principals are given by district leadership on school climate. This chapter presented the findings of the three research questions that guided this study. Organizational supports were conceptualized as a school-level construct and were derived as a latent independent variable through multilevel confirmatory factor analysis (MCFA) based on principal autonomy, professional development, personnel resources, and resources. Finally, school climate was conceptualized as also existing at both the teacher and school levels and was derived as a latent dependent variable through MCFA based on both the teacher and principal perceptions about the climate of the school such as relationships, violence, and involvement.

This study utilized the the Organisation for Economic Co-operation and Development (OECD) Teaching and Learning International Survey (TALIS 2018) which collected data from a variety of countries to review the environments, working conditions, and workforce using a consistent framework (OECD, 2019). Although principals and teachers from 48 countries were surveyed only those from the United States were used in this study which consisted of 2,560 teachers and 166 principals. This

study included control variables at both the teacher and the school level. The school level control variables included principal gender, principal years of experience, school size, school socio-economic status, and student teacher ratio. At the teacher level, the control variables included teacher gender and years of experience.

The multilevel confirmatory factor analysis (MCFA) was utilized to develop the constructs from the teacher perceptions in the TALIS 2018 survey. Finally, a multilevel structural equation modeling (MSEM) approach was utilized to determine the influence of district level resources on school climate.

The results indicated that school resources, which included instructional materials, digital technology, internet access, library materials, instructional space, physical infrastructure, and materials for vocational skills had an impressive effect on disciplinary climate and the ability to hire personnel. The ability to hire personnel had a significant impact on teacher student relations. There was also a significant impact of teacher student relations on delinquency and violence as well as disciplinary climate. Finally, the removal of barriers to professional development had an impressive effect on autonomy and an inverse relationship with delinquency and violence.

This study found that in the United States TALIS 2018 data set, principal professional development directly impacted autonomy and delinquency and violence and had a mediated effect on student teacher relationships through autonomy.

Chapter 5

Discussion

Chapter 5 delivers an analysis of the outcomes that were presented in Chapter 4 in four sections. The first section offers a summary of the key findings from the analysis. The second section investigates the limitations of the study. Next, the third section deliberates the implications for practice. Finally, the last section addresses paths for future research.

Summary of Major Findings

The purpose of this study was to review the necessary resources and supports district leaders can provide to principals to make positive changes in school climate. Because resources are often scarce and school climate impacts educational outcomes, it is important for district leaders to know what organizational supports building leaders need in order to improve school climate.

This quantitative multilevel study utilized the United States' data from the 2018 Teaching and Learning International Survey (TALIS) to analyze the relationships between organizational supports and school climate. A sequence of multilevel regressions was executed to examine these relationships. The purpose of this analysis was to understand how the provision of resources for building level leaders impacted school climate as defined by the safe and supportive schools model from the United States Department of Education. School resources were specifically analyzed because there is limited inquiry linking those resources to school climate (Cohen et al., 2009; Thapa et al., 2013; Wang & Degol, 2016).

The findings in this study encompasses the properties needed to enhance school climate. Since school climate comprises of all of the aspects of school life (Okorji et al., 2016), this study confirms this complexity of school climate and the identification of resources needed to augment it. Although simply supplying more resources is not enough, this study does reveal the significant relationship between resources and the improvement of school climate. If the goal of the school is to increase their schools' climate, then understanding how district leaders can augment principals' autonomy and its corresponding effect on student teacher relationships is a vital step. The results are noted in Figure 19.

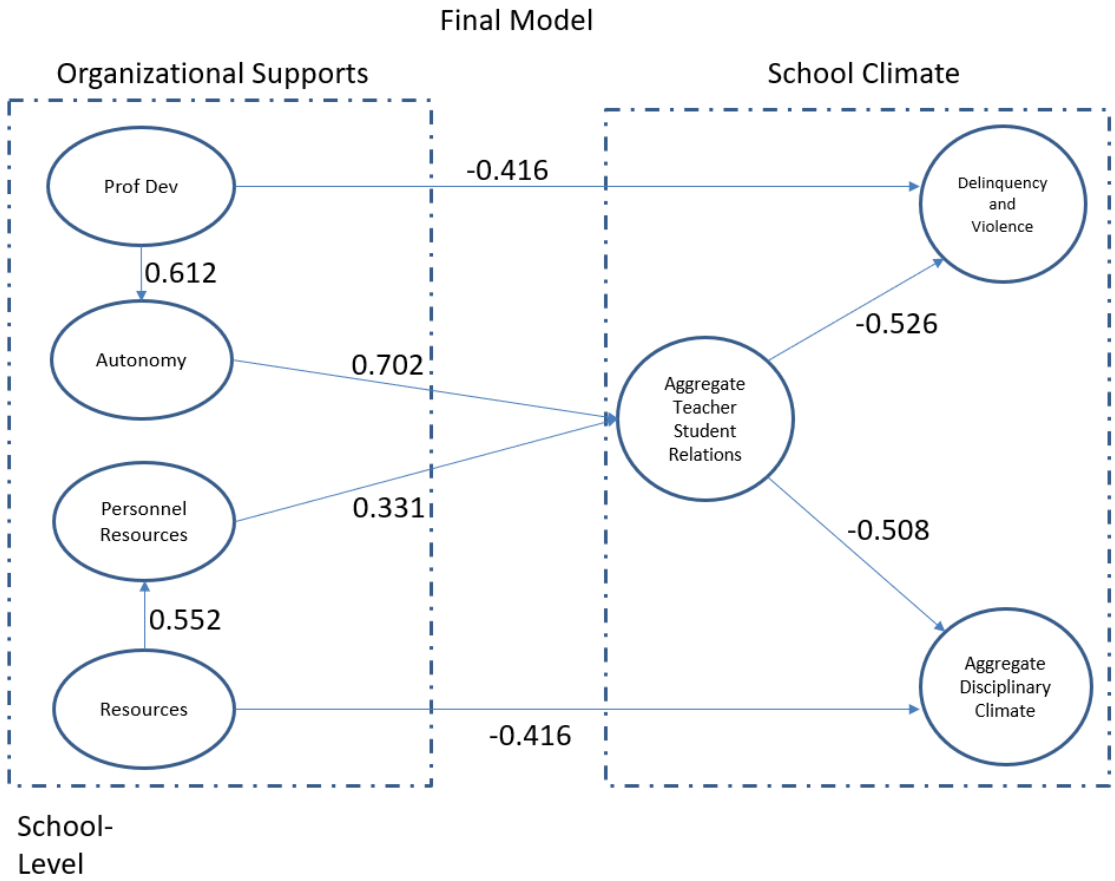


Figure 19. Final model.

Research Question 1: To what extent does principal professional development have an impact on school climate? In this study, principal professional development was utilized as a predictor of the school climate. In order to build and sustain transformation, it is essential that all levels of the school district have a continual emphasis on building capacity (Augustine-Shaw, 2018). Since increasing school climate at the building-level requires significant transformation, principal professional development was measured analyzed from the principal perspective.

The findings from the first research question suggest that principal professional development has a direct impact on school climate, specifically on delinquency and violence. Principal professional development also has a significant effect on autonomy. Finally, principal professional development has a mediating effect on teacher student relations through principal autonomy. As the principals receive additional professional development, they perceive themselves to be more autonomous which in turn increases teacher student relations.

Conceptually, this finding is consistent with the National Association of Secondary School Principals (NASSP)'s statement that ongoing professional development, mentoring and support is needed to align district expectations for principal leadership to school and district mission and needs (NASSP, 2020). The prowess of the principals provides the foundation for schools (Le Floch et al., 2016) and, as a result, the principals are able to influence the teachers, students and culture of the building (Coelli & Green, 2012).

Research Question 2: To what extent does the school autonomy have an impact on school climate? School autonomy is one of the most important factors that

affect the ability for principals to be successful (Whitmire, 2012). When principals are autonomous, they have the ability to support teacher student relations. In this study, school autonomy in curriculum, staffing, budgeting, and policies were combined into one variable which was used to predict school climate.

The analysis revealed some interesting findings. School autonomy was found to have a direct impact on school climate through teacher student relations at the school level. The findings show that when principals are bestowed more autonomy in curriculum, staffing, budgeting, and policies, there is a significant impact on teacher student relations, and this positive relationship then leads to decreased delinquency and violence and fewer discipline referrals in the schools. This supports Wang and Degol's study regarding the importance of strong relationships in schools (2016). It also supports Archambault et al. (2017), in that students who have stronger relationships with teachers typically have a greater connection to schools.

Research Question 3: To what extent does the provision of resources have an impact on school climate? School resources are scarce, so it is essential that they are utilized in the most impactful manner. According to the Wallace Foundation, districts have five strategies in regards to resources which includes providing principals greater autonomy with resources, involving principals in budget discussions, differentiating supports for principals, encouraging principals to foster additional resources, and considering time as the most critical resource (Bottoms & Schmidt-Davis, 2010).

School resources, which included instructional materials, digital technology, internet access, library materials, instructional space, physical infrastructure, and materials for vocational skills, have an impact on the number of disciplinary referrals that

occur in the school. School resources also have an effect on the ability to hire and retain qualified personnel. Furthermore, the ability of the school to provide qualified personnel had a significant impact on the teacher student relationships in the building. Finally, by increasing the teacher student relationships, the school has the ability to decrease discipline in the building.

Conclusions

This study clearly highlighted the need for district leaders to provide resources to principals to positively impact their school climate. First, the need for professional development for principals. This professional development leads to less delinquency and violence and an increase in autonomy in the areas of curriculum, staffing, budgeting, and policies. Second, as a result of this autonomy, the school increases teacher student relations. Next, an increase in school resources, which included instructional materials, digital technology, internet access, library materials, instructional space, physical infrastructure, and materials for vocational skills, lead to a fewer number of disciplinary referrals that occur in the school. The resources also increase the likelihood of attracting qualified personnel. Finally, an increase in qualified personnel result in an increase the teacher student relations. These relations include students and teachers getting along, teachers believing in the students' well-being, teachers interested what the students have to say, and teachers helping students when they need additional support. Furthermore, the positive teacher student relations reduce the discipline referrals due to theft, vandalism, and physical violence and the number of referrals in general.

Limitations of the Study

There are four limitations to this study. First, the survey utilized in this study was developed and originated by the Teaching and Learning International Survey (TALIS) as part of the Organization for Economic Cooperation and Development (OECD) in 2017. Although this survey collects data from across the world, only the data from the United States was utilized. Therefore, this study cannot be generalized to other countries. In addition, the data was collected prior to the development of this study. This means that the research questions posed had to rely on the queries that were developed from the survey rather than the survey being developed around the research questions.

Secondly, the researcher did not have an opportunity to ask follow-up questions or ensure that the questions on the survey were interpreted in the same manner between the respondents. Follow-up questions would have allowed the researcher to gain valuable knowledge about the leadership style the principal utilizes which in turn can make a significant impact on the schools' climate. The interpretation of questions by the respondent is a common limitation that occurs when surveys are utilized to collect data. However, the model fit indices did indicate that the participants responded in a consistent fashion.

Next, no control variables were included in this study. The study was very complex and preliminary results are very positive. But, without the control variables, there is no method to account for alternative explanations. By adding the control variables, the researcher can investigate whether or not the relationship is spurious, or caused by other variables.

Finally, when studying school climate, research shows that many different variables can be considered to evaluate school climate. The variables utilized in this study were not inclusive of every variable that affects school climate. For all of the aspects of school climate to have been evaluated, the study would have become extremely complex.

Implications for Practice

District leaders face many challenges regarding how to productively and efficiently deploy resources in a manner that best meets the needs of students, staff, and the community. Because resources are scarce, there are many competing priorities for administrators to consider as the budget is being developed.

Many guides and manuals explain how to construct a district budget. Most start with reviewing the district's vision, mission, and goals and then determining the district's priorities for the next several years. Once these have been set, focusing on the current year is the next step. This culmination is reviewed and examined as current budget and resources are weighed. Because school climate affects every aspect of the educational system, it is essential that district administrators not only prioritize school climate but also ascertain what resources can positively affect school climate.

Researchers largely agree on the definitive leadership practices that are prevalent among successful schools (Leithwood et al., 2020). These practices include the talent to build a shared vision; model the school's values and practices; build trusting relationships with students, personnel, and parents; uphold a healthy and safe school environment; apportion resources to support the school's vision and goals; and buffer faculty from disruptions to their instructional work. These leadership practices lead to equity which is

perhaps the greatest renowned of the outcomes and advances equitable outcomes for all students. In order for principals to have these practices, they must have appropriate professional development.

The results of this study demonstrate that providing professional development to principals is essential to increasing their autonomy. Often principals face conflict between the obligations to abide by with top-down directives and accountability policies and their need to be autonomous to satisfy the needs of their schools. Although both are competing priorities, they are both essential to the success of the principals. While the autonomy of principals is not the main goal, it is a necessary component that must exist if the principals are going to be successful in increasing the school climate in their buildings. District leaders who yearn to positively influence the school climate in buildings would be judicious to focus on supporting the capacity of their principals.

Future Research

Future research on the study of leadership and school climate could be performed in several captivating ways. Three particular directions for future research are outlined below. They include a recommendation for a study investigating the resources, the inclusion of control variables, a comparison of other nations to the United States, and the examination of the development and characteristics of school leaders in light of school climate.

Investigation of resources. As previously mentioned, one of the more interesting findings from the study was the lack of significance of the resources, personnel and other material resources, on school climate. Because school climate was viewed as engagement, safety, and environment, future research could examine the more intimate

details of school climate such as respect for diversity, physical environment, academic environment, and wellness. It would be interesting to see if the need for these resources would be heightened with these additional set of variables.

Inclusion of control variables. This study did not include any of the control variables. By including those, a researcher can determine whether or not there are additional alternative explanations for the results of this study. From the literature, these variables may include teacher and principal gender, teacher years of experience, the school size and the school level of poverty.

Comparison to other nations. This study focused solely on the United States. Therefore, it cannot be generalized across the world and countries cannot be compared to one another. The TALIS (2018) provides data from 48 different countries. A researcher could utilize all the data to provide an internationally generalizable sample. A researcher could also separate the data and compare at the country level. This could also be conducted through the addition of the country as a third level to the model. Finally, countries could be examined one at a time and the results could be combined into a comparison tool.

School leader characteristics and development. A final path for future research would be to explore the characteristics of a leader and their impact on school climate. The TALIS (2018) does not provide for the collection of the characteristics of a principal. Future studies could look into these characteristics and their influence on the climate in the schools. In addition, the TALIS (2018) does not examine the development of the principal. The survey reviews the barriers to professional development, but it does not explore the varieties of professional development nor those that would enhance the

likelihood that the principal would have the necessary skills to improve their school's climate. A qualitative research study would provide for the opportunities to develop questions which would be able to answer these questions more fully.

References

Acquiring, Allocating & Managing Resources in Education. (2017, December 27). Retrieved from https://study.com/academy/lesson/acquiring-allocating-managing-resources-in-education.html

Adamowski, S., & Petrilli, M. J. (2007). Confronting the autonomy gap. *Principal, 87*(2), 46-49.

Adams, J. E. (2008). Funding student learning: How to align education resources with student learning goals (A Report prepared for the School Finance Redesign Project). Retrieved from http://www.crpe.org/sites/default/files/pub_sfrp_wrkgrp_oct08_0.pdf

Adamson, L. (2012). *Exploring principal autonomy in charter, private, and public schools*. PhD Thesis, California State University, US.

Allen, N., Grigsby, B., & Peters, M. L. (2015, November). Does leadership matter? Examining the Relationship among Transformational Leadership, School Climate, and Student Achievement. 22. *NCPEA International Journal of Educational Leadership Preparation, 10*(2).

Allensworth, E. M., & Hart, H. (2018). *How do principals influence student achievement?* Chicago, IL: University of Chicago Consortium on School Research.

Archambault, I., Vandenbossche-Makombo, J., & Fraser, S. (2017). Students' oppositional behaviors and engagement in school: The differential role of the student-teacher relationship. *Child Family Studies, 26,* 1702-1712. https://doi.org/10.1007/s10826-017-0691-y

Augustine-Shaw, D. (2018). Developing leadership capacity in new rural school district leaders: The Kansas Educational Leadership Institute. *The Rural Educator, 37*(1). https://doi.org/10.35608/ruraled.v37i1.274

Blase, J., & Blase, J. (2000). Effective instructional leadership: Teachers' perspectives on how principals promote teaching and learning in schools. *Journal of Educational Administration, 38*(2), 130–141. https://doi.org/10.1108/09578230010320082.

Bottoms, G., & Schmidt-Davis, J. (2010, August). *The three essentials: Improving schools requires district vision, district and state support, and principal leadership* (Rep.). Retrieved June 27, 2020, from Southern Regional Education Board website: https://www.wallacefoundation.org/knowledge-center/Documents/Three-Essentials-to-Improving-Schools.pdf

Boudreaux, M. (2017, January). Principals' dispositions regarding their autonomy in site-based school management. *National Forum*. Retrieved from: https://www.researchgate.net/publication/316255456.

Bowers, A. J., Blitz, M., Modeste, M., Salisbury, J., & Halverson, R. (2017). How leaders agree with teachers in schools on measures of leadership practice: A two-level latent class analysis of the comprehensive assessment of leadership for learning. *Teachers College Record, 119*(4), 38.

Bradshaw, C. P., Waasdorp, T. E. Debnam, K. J., & Lindstrom Johnson, S. (2014). Measuring school climate in high schools: A focus on safety, engagement, and the environment. *Journal of School Health 84*(9), 539-604. https://doi.org/10.1111/josh.12186

Bressman, S., Winter, J. S., & Efron, S. E. (2018). Next generation mentoring: Supporting teachers beyond induction. *Teaching and Teacher Education*, *73*, 162–170. https://doi.org/10.1016/j.tate.2018.04.003

Brophy, J. (2006). History of research on classroom management. In C. M. Evertson & C. S. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 17-43). Mahwah, NJ: Lawrence Erlbaum.

Brown, K. M. (2016). "Racing to the Top" to Prepare Turnaround Principals in North Carolina: Homegrown Regional Leadership Academies. *Educational Leadership and Administration: Teaching and Program Development, 27*, 101-144.

Butler, A. R. (2006). *The relationship between resource allocation patterns in Missouri K-12 public school districts and student performance*. Dissertations. 608. Retrieved June 19, 2020, from https://irl.umsl.edu/cgi/viewcontent.cgi?article=1609&context=dissertation

Cardwell, M. E. (2011). *Patterns of relationships between teacher engagement and student engagement*. Education Doctoral. Paper 49.

Castro Silva, J., Amante, L., & Morgado, J. (2017). School climate, principal support and collaboration among Portuguese teachers. *European Journal of Teacher Education*, *40(4)*, 505-520. Retrieved from https://doi.org/10.1080/02619768.2017.1295445.

Cheema, J., & Kitsantas, A. (2014). Influences of disciplinary classroom climate on high school student self-efficacy and mathematics achievement: A look at gender and racial-ethnic differences. *International Journal of Science and Mathematics*

Education, *12*(5), 1261-1279. Retrieved from http://dx.doi.org/10.1007/s10763-013-9454-4.

Coelli, M., & Green, D. A. (2012). Leadership effects: School principals and student outcomes. *Economics of Education Review*, *31*(1), 92–109. Retrieved from https://doi.org/10.1016/j.econedurev.2011.09.001.

Cohen, J., McCabe, E. M., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record*, *111*(1), 180–213.

Cole-Foppe, L. A. (2016). Principals as instructional leaders, determiners of school climate, and facilitators of student achievement. McKendree University, *ProQuest*, 2016.

Coulston, C., & Smith, K. (2013). School climate and inclusion. In T. Dary & T. Pickeral (Ed.), School climate practices for implementation and sustainability. *A School Climate Practice Brief*, Number 1. New York: National School Climate Center.

da Luz, F. S. dos R. (2015). The relationship between teachers and students in the classroom: Communicative language teaching approach and cooperative learning strategy to improve learning. In *BSU Master's Theses and Projects.* Item 22. Available at https://vc.bridgew.edu/theses/22

Davis, S., Darling-Hammond, L., LaPointe, M., & Meyerson, D. (2005). *School leadership study: Developing successful principals (review of research).* Stanford, CA: Stanford University, Stanford Educational Leadership Institute.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: Macmillan.

Dillon, E. (2011). The road to autonomy: Can schools, districts, and central offices find their way. *Education Sector Reports: The Road to Autonomy*.

Dou, D., Devos, G., & Valcke, M. (2017). The relationships between school autonomy gap, principal leadership, teachers' job satisfaction and organizational commitment. *Educational Management Administration & Leadership, 45*(6), 959–977. https://doi.org/10.1177/1741143216653975

Duckenfeld, M., & Reynolds, B. (2013). In T. Dary & T. Pickeral (Ed), School climate and dropout prevention. In T. Dary & T. Pickeral (Ed.), *School climate practices for implementation and sustainability*. A School Climate Practice Brief, Number 1. New York: National School Climate Center.

DuFour, R. (2002). The learning-centered principal. *Educational Leadership, 59*(8), 12-15.

Dufour, R., & Marzano, R. J. (2012). *Leaders of learning: How district, school, and classroom leaders improve student achievement*. Bloomington, IN: Solution Tree.

Dyer, N. G., Hanges, P. J., & Hall, R. J. (2005). Applying multilevel confirmatory factor analysis techniques to the study of leadership. *Science Direct Leadership Quarterly, 16*, 149-167.

Dynarski, M., Clarke, L., Cobb, B., Finn, J., Rumberger, R., & Smink, J. (2008). *Dropout prevention: A practice guide* (NCEE 2008–4025). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc.

Earley, P., & Bubb, S. (2013). A day in the life of new headteachers: Learning from observation. *Educational Management Administration & Leadership, 41*(6), 782-799. https://doi.org/10.1177/17411 43213494189.

Evertson, C. M., & Weinstein, C. S. (Eds.). (2006). *Handbook of classroom management: Research, practice, and contemporary issues*. Mahwah, NJ: Lawrence Erlbaum.

Fink, E., & Resnick, L. (2001). Developing principals as instructional leaders. *Phi Delta Kappan, 82*(8), 598-610.

Fullan, M., Cuttress, C., & Kilcher, A. (2005). Eight forces for leaders of change: Presence of the core concepts does not guarantee success, but their absence ensures failure. *Journal of Staff Development, 26(4),* 54-58.

Gage, N. A., Scott, T., Hirn, R., & MacSuga-Gage, A. S. (2018). The relationship between teachers' implementation of classroom management practices and student behavior in elementary school. *Behavioral Disorders, 43*(2), 302–315. https://doi.org/10.1177/0198742917714809

García Torres, D. (2019). Distributed leadership, professional collaboration, and teachers' job satisfaction in U.S. schools. *Teaching and Teacher Education, 79*, 111–123. https://doi.org/10.1016/j.tate.2018.12.001

Gay, L. R., Mills, G. E., & Airasian, P. W. (2009). *Educational research: Competencies for analysis and applications* (9th ed.). Upper Saddle River, NJ: Prentice Hall.

Gigliotti, P., & Sorensen, L. (2018, August). *Educational resources and student achievement: Evidence from the Save Harmless provision in New York State/ Elsevier Enhanced Reader*. https://doi.org/10.1016/j.econedurev.2018.08.004

Gilles, C., Wang, Y., Fish, J., & Stegall, J. (2018). “I learned by watching my mentor.” Nurturing teacher leadership with an induction program. *Mentoring & Tutoring: Partnership in Learning*, *26*(4), 455–475. https://doi.org/10.1080/13611267.2018.1530174

Gold, A., Evans, J., Earley, P., Haplin, D., & Collarbone, P. (2003). Principled principals? Values-driven leadership: Evidence from ten case studies of ‘outstanding’ school leaders. *Educational Management & Administration, 31*(2), 127-138.

Goodwin, R. H., Cunningham, M. L., & Eagle, T. (2005). The changing role of the secondary principal in the United States: An historical perspective. *Journal of Educational Administration and History*, *37*(1), 1–17. https://doi.org/10.1080/0022062042000336046

Grazia, V., & Molinari, L. (2020). School climate multidimensionality and measurement: A systematic literature review. *Research Papers in Education*, 1–27. https://doi.org/10.1080/02671522.2019.1697735

Greenwald, R., Hedges, L. V., & Laine, R. D. (1996). The effect of school resources on student achievement. *Review of Educational Research*, *66*(3), 361–396. https://doi.org/10.3102/00346543066003361.

Gregory, A., Cornell, D., Fan, X., Sheras, P., Shih, T., & Huang, F. (2010). Authoritative school discipline: High school practices associated with lower student bullying and victimization. *Journal of Educational Psychology*, *102*, 483–496. doi:10.1037/ a0018562

Grissom, J. A. & Harrington, J. R. (2010). Investing in administrator efficacy: an examination of professional development as a tool for enhancing principal effectiveness. *American Journal of Education, 116*, 583-612.

Hallinger, P., Bickman, L., & Davis, K. (1996). School context, principal leadership, and student reading achievement. *The Elementary School Journal, 96*(5), 527-549. https://doi.org/10.1086/461843.

Hanushek, E. (1997). Assessing the effects of school resources on student performance: An update. *Educational Evaluation and Policy Analysis, 19*(2), 141-164.

Hanushek, E. A., Link, S., & Woessmann, L. (2013). Does school autonomy make sense everywhere? Panel estimates from PISA. *Journal of Development Economics, 104*, 212–232. https://doi.org/10.1016/j.jdeveco.2012.08.002

Harrison, C., & Killion, J. (2007). Ten roles for teacher leaders. *Educational Leadership Journal, 65*(1), 74-77. Retrieved March 6, 2020, from http://www.ascd.org/publications/educational-leadership/sept07/vol65/num01/Ten-Roles-for-Teacher-Leaders.aspx.

Heck, R., & Thomas, S. (2015). *An introduction to multilevel modeling techniques: MLM and SEM approaches using Mplus* (3rd ed.). New York: Routledge.

Heffernan, A. & Pierpoint, A. (2020). *Autonomy, accountability, and principals' work: an Australian study*. Australian Secondary Principals' Association.

Hodges, T. (2018). Using survey data to foster engagement among students, parents, and teachers. *Principal*. Retrieved October 4, 2020, from https://www.naesp.org/sites/default/files/Hodges_SO18.pdf?utm_source=link_wwwv9&utm_campaign=item_244022&utm_medium=copy.

Hofflinger, A., & von Hippel, P. T. (2020). Does achievement rise fastest with school choice, school resources, or family resources? Chile from 2002 to 2013. *Sociology of Education*, *93*(2), 132–152. https://doi.org/10.1177/0038040719899358

Honig, M. I., & Rainey, L. R. (2012). Autonomy and school improvement: What do we know and where do we go from here? *Educational Policy*, *26*(3), 465–495.

Hughes, W. H., & Pickeral, T. (2013). School climate and shared leadership. In T. Dary & T. Pickeral (Ed.), *School climate practices for implementation and sustainability*. A School Climate Practice Brief, Number 1. New York: National School Climate Center.

Jacob, R., Goddard, R., Kim, M., Miller, R., & Goddard, Y. (2015). Exploring the casual impact of McREL Balanced Leadership program on leadership, principal efficacy, instructional climate, educator turnover, and student achievement. *Educational Evaluation and Policy Analysis*, *37*(3), 314-332.

Jones, A., & Shindler, J. (2016). Exploring the school climate—student achievement connection: Making sense of why the first precedes the second. *Educational Leadership and Administration: Teaching and Program Development*, *27*, 35-51.

Kearney, C. A., Sanmartin, R., & Gonzalvez, C. (2020). The School Climate and Academic Mindset Inventory (SCAMI): Confirmatory Factor Analysis and Invariance Across Demographic Groups. *Frontiers in Psychology*, *11*, 2061. https://doi:10.3389/fpsyg.2020.02061

Keith, T. (2019). *Multiple regression and beyond: An introduction to multiple regression and structural equation modeling* (3rd ed.). New York: Routledge.

King Rice, J. (2010). *Principal effectiveness and leadership in an era of accountability: What research says: (722272011-001)* [Data set]. American Psychological Association. https://doi.org/10.1037/e722272011-001

Knight, D. S. (2019). Are school districts allocating resources equitably? The Every Student Succeeds Act, Teacher Experience Gaps, and Equitable Resource Allocation. *Educational Policy*, *33*(4), 615–649. https://doi.org/10.1177/0895904817719523

Kochan, F. K., Bredeson, P., & Riehl, C. (2005). Rethinking the professional development of school leaders. *Yearbook of the National Society for the Study of Education*, *101*(1), 289–306. https://doi.org/10.1111/j.1744-7984.2002.tb00013.x

Konishi, C., Miyazaki, Y., Hymel, S., & Waterhouse, T. (2017). Investigating associations between school climate and bullying in secondary schools: Multilevel contextual effects modeling. *School Psychology International*, *38*(3), 240–263. https://doi.org/10.1177/0143034316688730

Koonce, M., Pijanowski, J. C., & Bengtson, E. (2019). Principal engagement in the professional development process. *National Association of Secondary School Principals*, *103*(3). https://doi-org.libproxy.unl.edu/10.1177/0192636519871614

Lafortune, J., Rothstein, J., & Schanzenbach, D. W. (2018). School finance reform and the distribution of student achievement. *American Economic Journal: Applied Economics*, *10*(2), 1–26. https://doi.org/10.1257/app.20160567

Lane, E. S. (2016). Examining the relationship between principal leadership and school climate. *Electronic Theses and Dissertations*. 1094. https://digitalcommons.du.edu/etd/1094.

Lane, E., Linden, R., & Stange, K. (2018). *Socioeconomic disparities in school resources: New evidence from within-district.* Retrieved February 27, 2021 from: http://www-personal.umich.edu/~kstange/papers/LaneLindenStangeOct2018.pdf

Lazenby, S., McCulla, N., & Marks, W. (2020). The further professional development of experienced principals. *International Journal of Leadership in Education*, 1–15. https://doi.org/10.1080/13603124.2020.1716999

Le Floch, K. C., O'Day, J., Birman, B., Hurlburt, S., Nayfack, M., Halloran, C., Boyle, A., Brown, S., Mercado-Garcia, D., Goff, R., Rosenberg, L., & Hulsey, L. (2016). *Case studies of schools receiving school improvement grants: Final report* (NCEE 2016-4002). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Leithwood, K., Harris, A., & Hopkins, D. (2020). Seven strong claims about successful school leadership revisited. *School Leadership & Management, 40*(1), 5-22, DOI: 10.1080/13632434.2019.1596077

Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). Executive summary: How leadership influences student learning. *Learning from Leadership Project*, 90.

Lynch, M. (2011). Allocating resources to improve student learning. *HuffPost*. Retrieved June 20, 2020, from https://www.huffpost.com/entry/allocating-resources-to-i_b_1018778

MacNeil, A. J., Prater, D. L., & Busch, S. (2009). The effects of school culture and climate on student achievement. *International Journal of Leadership in Education*, *12*(1), 73–84. https://doi.org/10.1080/13603120701576241.

Manna, P. (2015). *Developing excellent school principals to advance teaching and learning: considerations for state policy* (Publication). Retrieved July 25, 2020, from The Wallace Foundation website: www.wallacefoundation.org

Mapp, K., & Kuttner, P. (2013). *Department of Education dual capacity framework*. U.S. Department of Education. Retrieved October 4, 2020, from http://www2.ed.gov/documents/ family-community/partners-education.pdf

Marsh, J., Strunk, K., Bush, S., & Huguet, A. (2015). Democratic engagement in district reform: The evolving role of parents in the Los Angeles Public School Choice Initiative. *Educational Policy, 29*, 51-84.

Miles, K. H. (2019, February). *Seizing the moment for transformation: Nine ways school systems can restructure resources for student success*. Retrieved July 26, 2020, from https://www.erstrategies.org/cms/files/4142-seizing-the-moment-for-transformation-feb-2019.pdf

Miles, K. H., & Darling-Hammond, L. (2020). Rethinking the allocation of teaching resources: Some lessons from high-performing schools. *Educational Evaluation and Policy Analysis, 20*(1), 9-29.

Miles, K. H., Ferris, K., & Green, G. Q. (2017). *Designing schools that work: Organizing resources strategically for student success*. Retrieved July 15, 2020, from https://files.eric.ed.gov/fulltext/ED560045.pdf

Miller, J. M., & Youngs, P. (2021). Person-organization fit and first-year teacher retention in the United States. *Teacher and Teacher Education, 97*. https://doi.org/10.1016/j.tate.2020.103226

Miranda-Zapata, E., Lara, L., Navarro, J.-J., Saracostti, M., & de-Toro, X. (2018). Modelling the effect of school engagement on attendance to classes and school performance. *Revista de Psicodidáctica (English Ed.)*, *23*(2), 102–109. https://doi.org/10.1016/j.psicoe.2018.03.001

Modeste, M. E., & Kelley, C. J. (2020). Examining distributed leadership practices by school grade configuration. *Leadership and Policy in Schools*, *19*(2), 209–238. https://doi.org/10.1080/15700763.2018.1514057

Monk, D. H., & Hussain, S. (2000). Structural influences on the internal allocation of school district resources: Evidence from New York State. *Educational Evaluation and Policy Analysis*, *22*(1), 1–26. https://doi.org/10.3102/01623737022001001.

Moore, H., Astor, R. A., & Benbenishty, R. (2020). Role of school-climate in school-based violence among homeless and nonhomeless students: Individual- and school-level analysis. *Child Abuse and Neglect, 202*. https://doi.org/10.1016/j.chiabu.2020.104378

Nakagawa, K. (2000). Unthreading the ties that bind: Questioning the discourse of parent involvement. *Educational Policy, 14*, 443-472.

National Association of School Psychologists. (2019). *Guidance for measuring and using school climate data* [Brief]. Bethesda, MD: National Association of School Psychologists.

National Association of Secondary School Principals (NASSP). (2020, May 19). *Position statement: Principal training.* Retrieved June 23, 2020, from https://www.nassp.org/policy-advocacy-center/nassp-position-statements/principal-training/

National Center on Safe and Supportive Learning Environments. (2017). *School climate improvement action guide for school leaders*. Retrieved from https://eric.ed.gov/?id=ED580910

National School Climate Council. (2007). *The school climate challenge: Narrowing the gap between school climate research and school climate policy, practice guidelines and teacher education policy*. Retrieved from http://www.schoolclimate.org/ climate/advocacy.php

OECD. (2017). *The funding of school education: Connecting resources and learning*. OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264276147-en.

OECD. (2019). *TALIS 2018 Technical Report*. OECD Publishing, Paris. https://www.oecd.org/education/talis/TALIS_2018_Technical_Report.pdf

OECD. (2020, March 30). *Review education policies - Education GPS*. Retrieved June 14, 2020, from https://gpseducation.oecd.org/revieweducationpolicies/

Okorji, P. N., Igbokwe, I. C., & Ezeugbor, C. O. (2016). Relatıonshıp between school clımate and principals' job performance in secondary schools. *European Scientific Journal (ESJ), 12*(4), 55. https://doi.org/10.19044/esj.2016.v12n4p55.

Pan, D., Rudo, Z. H., Schneider, C. L., & Smith-Hansen, L. (2003). *Examination of resource allocation in education: Connecting spending to student performance* (p. 116). Austin, TX: Southwest Educational Development Laboratory.

Payne, A. A. (2018). *Creating and sustaining a positive and communal school climate: Contemporary research, present obstacles, and future directions* (p. 30). Washington, DC: U.S. Department of Justice, Office of Justice Programs.

Pechota, D., & Scott, D. (2020). *Principal development as a strategy in school improvement*. Education Commission of the States. Retrieved October 4, 2020, from https://files.eric.ed.gov/fulltext/ED603065.pdf.

Perry, A. C. (1908). *The management of a city school*. New York: Macmillan.

Peters, T. J., & Waterman, R. H. (1984). *In search of excellence: Lessons from America's best-run companies*. New York: Warner Books.

Plecki, M. L., Knapp, M. S., Castañeda, T., Halverson, T., LaSota, R., & Lochmiller, C. (2009). *How leaders invest staffing resources for learning improvement*. Center for the Study of Teaching and Policy University of Washington. Retrieved July 26, 2020, from https://www.education.uw.edu/ctp/sites/default/files/ctpmail/PDFs/S3-Resources-10-2009.pdf

Quin, J., Deris, A., Bischoff, G., & Johnson, J. T. (2015). Comparison of transformational leadership practices: Implications for school districts and principal preparation programs. *Journal of Leadership Education, 16*.

Ramsey, C. M., Spira, A. P., Parisi, J. M., & Rebok, G. W. (2016). School climate: Perceptual differences between students, parents, and school staff. *School Effectiveness and School Improvement, 27*(4), 629–641. https://doi.org/10.1080/09243453.2016.1199436.

Reaves, S., McMahon, S. D., Duffy, S. N., & Ruiz, L. (2018). The test of time: a meta-analytic review of the relation between school climate and problem behavior.

Aggress. Violent Behavior, 39, 100–108. https://doi.org/10.1016/j.avb.2018.01.006.

Romero Escobar, M. (2016, March 7). *Structural equation modeling: What is a latent variable?* The Analysis Factor. https://www.theanalysisfactor.com/what-is-a-latent-variable/

Ross, R. (2013). School climate and equity. In T. Dary & T. Pickeral (Ed.), *School climate practices for implementation and sustainability. A school climate practice brief, Number 1*. New York: National School Climate Center.

Rowland, C. (2017, April). *Principal professional development: New opportunities for a renewed state focus*. Retrieved from www.air.org/resource/principal-professional-development-new-opportunities-renewed-state-focus

Rudasill, K. M., Snyder, K. E., Levinson, H., & L. Adelson, J. (2018). Systems view of school climate: A theoretical framework for research. *Educational Psychology Review*, *30*(1), 35–60. https://doi.org/10.1007/s10648-017-9401-y

Sanders, M. G. (2012). Sustaining programs of school, family, and community partnerships: A qualitative longitudinal study of two districts. *Educational Policy*, *26*, 845-869.

Sangenito, S. (2014, November 5). *CHURN: The high cost of principal turnover.* Retrieved June 22, 2020, from https://www.acesconnection.com/fileSendAction/fcType/0/fcOid/405780286632981504/filePointer/405780286632981536/fodoid/405780286632981531/principal_turnover_cost.pdf.

Schweig, J., Hamilton, L., & Baker, G. (2019). *School and classroom climate measures: Considerations for use by state and local education leaders*. RAND Corporation. https://doi.org/10.7249/RR4259

Sebastian, J., Camburn, E., & Spillane, J. (2018). Portraits of principal practice: Time allocation and school principal work. *Educational Administration Quarterly*, *54*(1), 47-84.

Sebastian, J., Huang, H., & Allensworth, E. (2017). Examining integrated leadership systems in high schools: Connecting principal and teacher leadership to organizational processes and student outcomes. *School Effectiveness and School Improvement*, *28*(3), 463–488. https://doi.org/10.1080/09243453.2017.1319392

Sheldon, S. B., & Epstein, J. L. (2004). Getting students to school: Using family and community involvement to reduce chronic absenteeism. *School Community Journal*, *14*(2), pp. 39-56.

Shuck, B., Nimon, K., & Zigarmi, D. (2017). Untangling the predictive nomological validity of employee engagement: Participating variance in employee engagement using job attitude measures. *Group and Organizational Management, 42*(1), 79-112.

Sieberer-Nagler, K. (2016). Effective classroom-management & positive teaching. *English Language Teaching*, *9*(1). doi:10.5539/elt.v9n1p163

Silins, H., & Mulford, B. (2002). Schools as learning organisations: The case for system, teacher and student learning. *Journal of Educational Administration*, *4*(5), 425-446. Retrieved July 26, 2020, from https://doi-org.libproxy.unl.edu/10.1108/09578230210440285

Smith, T. E., Reinke, W. M., Herman, K. C., & Huang, F. (2019). Understanding family–school engagement across and within elementary- and middle-school contexts. *School Psychology*, *34*(4), 363–375. https://doi.org/10.1037/spq0000290

Solly, B. (2018, January 24). *Distributed leadership explained*. Retrieved June 27, 2020, from https://www.sec-ed.co.uk/best-practice/distributed-leadership-explained/

Sortkær, B., & Reimer, D. (2016). *Disciplinary climate and student achievement: Evidence from schools and classrooms*. Aarhus University Library. https://doi.org/10.7146/aul.154.126

Spillane, J. P., & Lee, L. C. (2014). Novice school principals' sense of ultimate responsibility: Problems of practice in transitioning to the principal's office. *Educational Administration Quarterly*, *50*(3), 431–465. https://doi.org/10.1177/0013161X13505290.

Stapleton, L. M., Yang, J. S., & Hancock, G. R. (2016). Construct meaning in multilevel settings. *Journal of Educational and Behavioral Statistics*, *41*(5), 481-520.

Steinberg, M. P., & Cox, A. B. (2017). School autonomy and district support: How principals respond to a tiered autonomy initiative in Philadelphia public schools. *Leadership and Policy in Schools*, *16*(1), 130–165. https://doi.org/10.1080/15700763.2016.1197278

Sutcher, L., Podolsky, A., Kini, T., & Shields, P. M. (2018, October 15). *Learning to lead: Understanding California's learning system for school and district leaders*. https://learningpolicyinstitute.org/product/californias-learning-system-brief

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research, 83*(3), 357–385. https://doi.org/10.3102/0034654313483907

Thapa, A., Cohen, J., Higgins- D'Alessandro, A., & Guffey, S. (2012). School climate research summary: August 2012. *School Climate Brief*, No. 3. National School Climate Center, New York. (www. schoolclimate.org/climate/research.php).

Thomas B. Fordham Institute. (2006). *Fund the Child: Tackling Inequity and Antiquity in School Finance*. Washington, D.C.: Thomas B. Fordham Instutite.

Viadero, D. (2009). Management Guru Says 'Student Load' Key to Achievement. *EdWeek* Retrieved July 26, 2020, from https://www.edweek.org/leadership/management-guru-says-student-load-key-to-achievement/2009/09.

Wang, M.-T., & Degol, J. L. (2016). School climate: A review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review*, *28*(2), 315–352. https://doi.org/10.1007/s10648-015-9319-1

Watts, G. D., & Castle, S. (1993). The time dilemma in school restructuring. *Phi Delta Kappa, 75*(4), 306. Retrieved July 26, 2020, from http://search.ebscohost.com.libproxy.unl.edu/login.aspx?direct=true&db=aph&AN=9403301778&site=ehost-live

Wenner, J. A., & Campbell, T. (2018). Thick and thin: Variations in teacher leader identity. *International Journal of Teacher Leadership, 9*(2), 18.

Whitmire, T. (2012). *"Strengthening school leadership"* (White paper). Stand for Children Leadership Center. Retrieved from http://docplayer.net/11571675-Strengthening-school-leadership.html

Wildy, H., Forster, P., Louden, W., & Wallace, J. (2004). The international study of leadership in education: Monitoring decision making by school leaders. *Journal of Educational Administration, 42*(4), 416–430.

Wilson, D. (2004). The interface of school climate and school connectedness and relationships with aggression and victimization. *The Journal of School Health, 74*(7), 293-299.

Wohlstetter, P., Malloy, C. L., Chau, D., & Polhemus, J. L. (2003). Improving schools through networks: A new approach to urban school reform. *Educational Policy, 17*(4), 399–430. https://doi.org/10.1177/0895904803254961

Wong, L., Coburn, C. E., & Kamel, A. (2020). How central office leaders influence school leaders' decision-making: Unpacking power dynamics in two school-based decision-making systems. *Peabody Journal of Education, 95*(4), 392-407. DOI: 10.1080/0161956X.2020.1800175

Wright, P. M., & McMahan, G. C. (2011). Exploring human capital: Putting 'human' back into strategic human resource management: Exploring human capital. *Human Resource Management Journal, 21*(2), 93–104. https://doi.org/10.1111/j.1748-8583.2010.00165.x

Appendix A

Variables Utilized in This Study

Variables Utilized in This Study

Scale	Variable	Label	Values (Coding)
Professional Development	TC3G09B	Barr.Prof.Dev. Professional development is too expensive	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree
	TC3G09C	Barr.Prof.Dev. There is a lack of employer support	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree
	TC3G09D	Barr.Prof.Dev. Professional development conflicts with my work schedule	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree
	TC3G09G	Barr.Prof.Dev. There are no incentives for participating in prof. developm.	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree
Resources	T3PLACRE	Lack of resources	1 – Not a problem 2 – A bit of a problem 3 – A problem
	T3PLACPE	Lack of pedagogical personnel	1 – Not a problem 2 – A bit of a problem 3 – A problem
Autonomy	T3PAUTS	School autonomy for staffing	1 – No autonomy 2 – Mixed autonomy 3 – Autonomy
	T3PAUTB	School autonomy for budgeting	1 – No autonomy 2 – Mixed autonomy 3 – Autonomy
	T3PAUTP	School autonomy for educational policies	1 – No autonomy 2 – Mixed autonomy 3 – Autonomy
	T3PAUTC	School autonomy for curriculum	1 – No autonomy 2 – Mixed autonomy 3 – Autonomy
School Climate	T3DISC	Teachers perceived disciplinary climate / Metric (All)	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree

Scale	Variable	Label	Values (Coding)
	T3PDELI	School delinquency and violence / Configural (All)	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree
	T3STAKE	Participation among stakeholders, teachers	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree
	T3STUD	Teacher-student relations / Metric (All)	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree
School level controlling variables	STRATIO	Student - Teacher Ratio	
	NENRSTUD	Number of enrolled students	1 – Under 250 2 – 250 – 499 3 – 500 – 749 4 – 750 – 999 5 – 1000 and above
	TC3G04B	Years as principal in total	
	TC3G01	Gender	1 – Female 2 – Male
	TC3G17C	Percentage of students from socioeconomically disadvantaged home	1 – none 2 – 1-10% 3 – 11-30% 4 – 31-60% 5 – 60+%
Teacher level controlling variables	TT3G01	Gender - T	1 – Female 2 – Male
	TT3G11B	Experiences As a teacher in total	
	TCHAGEGR	Teacher Age Groups	1 – Under 25 2 – 25-29 3 – 30-39 4 – 40-49 5 – 50-59 6 – 60 & above